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Leibniz : unity, thought, and being.

Thomas Anthony Steinbuch
University of Massachusetts Amherst

LEIBNIZ: UNITY, THOUGHT, AND BEING

A Dissertation Presented

By

THOMAS ANTHONY STEINBUCH

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To my friends, with love

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Thomas A. Steinbuch

Approved as to style and content by:

Leonard H. Ehrlich, Chairman of Committee

Robert C. Sleigh, Jr., Member

Robert Paul Wolff, Member

Richard Haven, Member

Edmund L. Gettier, III, Department Head
Department of Philosophy

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Thomas A. Steinbuch, B.A., Brooklyn College of CUNY

M.A., University of Massachusetts at Amherst

Directed by: Leonard H. Ehrlich

This work is an investigation of Leibniz's concern with the problems of unity. His concern with these problems is understood to be central to his metaphysics. His distinction between the unity of the individual as true unity and the unity of the general as a unity only of thought is seen to decisively condition his treatment of the problem of the composition of the continuum, his determination of the being space and time, of number, quality, and relation, and his effort to introduce the scholastic doctrine of substantial forms into post-Cartesian thought. The results of our investigation are: (1) an exposition of Leibniz's division of unity into the modes of unity through itself and unity through aggregation; (2) a determination of what unity is in the case of each of its modes; and (3) an exposition of the relatedness of unity in each of its modes to being.

Although the importance of the concept of unity for Leibniz is often noted by his commentators, neither his anal-

ysis of this concept nor the systematic implications of that analysis have been successfully understood. We show that the interpretations of Leibniz's doctrine to be found in Betrand Russell's Critical Exposition of the Philosophy of Leibniz and G. H. R. Parkinson Logic and Reality in Leibniz's Philosophy cannot be maintained. In the case of Russell's Critical Exposition, the failure of his interpretation of this doctrine is shown to invalidate the main critical assertion of his work; namely, that Leibniz maintained an inconsistent set of premisses.

The central point of our interpretation is that Leibniz's concept of substantial unity is precisely the concept of transcendental unity to be found in that main current of scholastic thought whose foremost representative was Thomas Aquinas. The Thomistic analysis of the concept of transcendental unity is not distinctive in scholastic tradition; however, like Aquinas, Leibniz holds that the principle of individual unity is substantial form, and this doctrine was original with Aquinas. For Leibniz, the unity of a substance is the undividedness of its being. Since for him, unity is identical with being *in re*, substance for him is simply undividedness of being.

Leibniz's concept of the unity of an aggregate is explicated as the basis of his concept of phenomenality. We show

that the unity of an aggregate is the numerical oneness of the thought which, in respect of some abstract concept such as time, place, movement, and shape, thinks the many reals as singly real. This numerical oneness of thought is the being of the aggregate; what he calls a phénomène bien fondé.

Finally, the suggestion is briefly investigated that the theory of transcendental being may be usefully applied in the field of interpretation theory. Transcendental being is intermediate between subjectivity and objectivity, and it is to this category that we may assign the interpreters own historical experience of the text. Thus, an historical encounter with the text need not be regarded as constituting what is merely subjective in the interpretation even though such an encounter can have no objective reference in the text itself. Jaspers's encounter with Nietzsche's Existenz in his Nietzsche interpretation and Bultmann's encounter with the kergyma of the New Testament are considered along these lines.

CONTENTS

C H A P T E R I

INTRODUCTION

Leibniz's metaphysics develops through constant reference to the unific. His investigations into the being of space and time, of number, quality, and relation; his interest in the problem of the composition of the continuum; his efforts to introduce the scholastic doctrine of substantial forms into post-Cartesian thought -- all are decisively conditioned by his distinction between the unity of the individual as true unity and the unity of the general as a unity only of thought.

Historically and systematically, the problems of unity are intwined with the problems of being. Together they constitute the fundamental concern of metaphysics. In ancient philosophy Aristotle determined the inseparability and fundamentality of these problems, and his determination was upheld by his successors. In Book I of the Metaphysics, he writes:

> That in a sense unity means the same as being is clear from the fact that its meanings correspond to the categories one to one, and that it is not comprised within any category (e.g. it is comprised neither in 'what a thing is' nor in quality, but is related to them just as being is); that in 'one man' nothing more is predicated than in 'man' (just as being is nothing apart from substance, quality,

> or quantity) and that to be one is just to be a particular thing.[1]

And with regard to the fundamental character of the problems of unity and being he writes:

> The inquiry that is hardest of all and the most necessary for the knowledge of the truth is whether unity and being are the substances of things and whether each of them, without being anything else, is being or unity respectively, or we must inquire what being and unity are with the implication that they have some other underlying nature.[2]

In Aristotle's opinion, being and unity present metaphysics with its most fundamental problem: namely, that of determing whether being and unity are through themselves or rather, whether they are through something whose nature it is to be being and unity. If we choose the latter of these alternatives, the basic problem of metaphysics emerges as the dual question: "what is being and what is unity"? The problems of being and unity have been repeatedly posed in this formulation and Aristotle himself poses them as such:

> And indeed, the question which was raised of old, and is raised now and always, and is always the subject of doubt, namely, what being is, is just the question what is substance?[3]

Over and against the Aristotelian affirmation of the inseparability of unity and being stands the tradition of Plotinus and his successors. In keeping with Plato's famous remark in the Republic that the Good "transcends es-

sence in dignity and surpassing power"[4] Plotinos posits the One as the source of being, though in itself it is without being. This is his meaning when at the beginning of the sixth book of the Enneads he writes: "It is in virtue of unity that beings are beings".[5]

Leibniz's thought cannot be squarely fit into either of these traditions. It moves from one to the other without the clear achievement of synthesis. Only the minimal statement can go unqualified -- that Leibniz's metaphysics is throughout decisively informed by a reflection on unity.

The following concerns are, therefore, of important consequence for Leibniz studies: (1) determination of the different modes of unity, their relationship to one another and their general systematic role in Leibniz's thought; (2) determination of what unity is in the case of each of its modes; (3) exposition of the relatedness of unity in all of its modes to being. We will show that, with respect to the work of Betrand Russell and G.H.R. Parkinson, that these concerns have not been successfully treated.

Leibniz's analysis of unity must be approached in light of the continuing discussion of this problem since antiquity. We know that he made a close study of Plato's Parmenides and since his teacher, Jacob Thomasius, was an Aristotelian, we may assume that he was well acquainted with Aristotle's classical discussion of unity

in Book I of the Metaphysics. Probably, however, the classical formulations of the problem were not nearly as decisive for his thought as were its formulations in scholastic philosophy. It is likely that he studied the original texts of Aquinas, Scotus, and Suarez, but the present state of Leibniz research leaves us without exact knowledge of the extent to which may have been influenced by them. Leibniz's general indebtedness to scholastic thought has been the subject of several outstanding studies in this century. Maurice Blondel's research into his development of the scholastic concept of a vinculum substantiale[6] comes to mind in a special way since it provided the basis for his own original position which, in turn, has exercised a decisive influence on the work of the contemporary theologian Gregory Baum.[7] Our own research establishes the area of his treatment of unity as among those importantly influenced by scholastic thought; here especially by that mainstream of scholasticism whose most outstanding spokesman was Thomas Aquinas. The special importance of Aquinas for these investigations derives from the fact that Leibniz maintains the distinctively Thomistic thesis that it is the substantial form of a substance which makes it to be a unity. The remaining aspects of his treatment of the problems of unity can be traced to doctrines that were common property

among the schoolmen.

For Thomas Aquinas, the doctrine that substantial form is the principle of unity has the immediate consequence that the intellectual soul is the only substantial form in man. This doctrine was one of Aquinas's most controversial; so much so that it was included in the bishop of Paris's condemnation of 1277, though only to be exempted from it some fifty years later. The difficulty was a simple one. All the scholastics, including St. Thomas, held that the intellectual soul is immortal. However, if the intellectual soul is the only substantial form in man, then it must be the form which denominates the matter of the body. To so closely associate the soul with matter was felt to be, at best, a denegration of the soul and, at worst, a threat to its immortality. The contrary thesis, that there is in man a plurality of substantial forms, was widely developed, espcially among the Fransicians. According to this view, the several substantial forms denominating man are of various degrees of perfection; the most perfect being the intellectual soul, the least perfect the forma corporalitas. These inform the matter of the body in a hierarchical order, the less perfect conferring the perfection necessary for the reception of the more perfect. It is the hierarchical ordering of the substantial forms denominating a substance which, on this view, constitute its unity.[8] No such doc-

trine as this is to be found in Leibniz's treatment of the problems of unity.

With the exception of his view that substantial form is the principle of unity, Leibniz's analysis of what unity is and what its modes are can be traced to doctrines that were commonplace in later scholasticism. Most of the schoolmen agreed that unity is a property which all beings possess just in so far as they are beings. Unity was thus said to be a "transcendental property", that is, a property which accompanies being in all of its divisions into genera and species and so transcends those divisions. Unity was not regarded as unique in this respect; truth, goodness, perhaps beauty, and of course, being itself were held to be transcendentals. Each was said to be "convertible with being", that is, every being is, in its being, one, true, and good. This doctrine was commonly expressed in the formula: "ens unum, verum, et bonum convertuntur". The concept of conversion is, of course, a logical one, and came to designate the identity of the transcendentals after the observation that the propositions: "every being is one", "every being is true", and so on, are convertible simpliciter.

In keeping with scholastic thought, unity, for Leibniz, means undividedness of indivision. He distinguished only two modes of unity -- the unity of a substance, or monad,

and the unity of an aggregate. Accordingly, he distinguished two modes of being -- being in itself ("ens per se") and being by aggregation ("ens per aggragationem"). A school of fish, a flock of sheep, a herd, and an army are some of Leibniz's favorite examples of beings by aggregation. A substance is a unity for Leibniz insofar as it is undivided in its being, that is, insofar as nothing other than it exercises its being. To use a formula we will employ extensively, to say that a substance is a unity is to say that its being does not admit of distinction into being belonging to itself and being belonging to what is other than itself. The unity of a substance is its self-identity -- its sameness with itself or, what is the same thing, its difference from everything else.

In Leibniz's analysis of the concept of being by aggregation we encounter some of his most original thought. By means of this analysis, he hopes to achieve a synthesis between the principles of the new science and the claims of traditional metaphysics.

A being by aggregation may be defined simply as many reals thought as singly real. The unity of an aggregate is constituted by the numerical oneness of the concept through which the many reals are thought. In one place, Leibniz lists number, time, place, movement, shape, and perceptible qualities as so many "abstractions of the

mind" through which thought thinks the many. So, for example, the unity of a school of fish is constituted by the numerical oneness of the perceived motion of this fish with the perceived motion of that fish, and so on. It is important to see that this unity is a unity of perception, or more generally, a unity of representation, not a unity of object perceived. The motion perceived and the perception of motion are, for Leibniz, one and the same. In general, Leibniz's position may be stated as follows: the unity of an aggregate is not a real unity, that is not a unity in the sense of an unum per se; rather, it is a unity only of thought.

An aggregate is neither a reality in the sense of an ens per se nor is it merely a thought-thing. Rather, it is a combination of both. Leibniz uses the term "well-founded phenomena" ("phénomène bien fondé") to designate the mode of being of an aggregate, and this formula is aptly indicative of its double nature. The phenomenality of an aggregate is constituted by the numerical oneness of the concept through which thought thinks the many as singly real. The singular reality which the many are thought as is identical with this numerical oneness of concept. Ultimately, the phenomenality of the aggregate has its foundation in the divine thought.

The reality of the aggregate, on the other hand, is

given by the reality of the many so thought. Thought has here a real object -- what it thinks are the many and the many are real. What is phenomenal is how the many are thought, namely, as singly real. While having no reality of its own, a being by aggregation nevertheless has the reality of its parts; its reality is not that of the in-itself but that, rather, of the in-another. A being by aggregation is thus not a mere phenomena or thought-thing having only subjective reality. It has objective reality, but not as belonging to itself.

We should recall at this point the list of "abstractions of the mind" which Leibniz lists through which thought thinks the many. These are number, time, place, movement, shape, and perceptible qualities. We noted that these and categories like them are constitutive of being by aggregation. This, together with the foregoing analysis of being by aggregation yields the result that number, time, place, and so on are constitutive of phenomenality. These categories designate fundamental modes of generality, and Leibniz extends his phenomenalist thesis to all modes of the general. The general is neither Form (Plato) nor law of nature (Aristotle); rather, it is a mode of thought which constitutes a phenomenal object out of the many reals so thought. Here emerges Leibniz's confrontation with the new science. Scientific thought concerns itself exclusively

with the general. The individual is investigated not in its individuality but in those respects only in which it can be indifferently replaced by any other individual of its kind. The thesis that scientific thought has the general as it object has been lately taken up by Gottfried Martin, whose investigations identify the origin of scientific thinking with the Socratic discovery of the general.[9] Leibniz's position on the new science may be summarized as follows. Scientific thinking is by its nature a thinking through general concepts. Such concepts have no direct objective reference; they are ways of thinking the many reals as singly real. This singular reality, or phenomenal object, is how such thought thinks the many reals. Since what is thought is real, such thinking is objective, that is, it is a thinking about objects; but since it thinks them as singly real it refers to them only indirectly.

With this analysis of scientific thought Leibniz hopes to achieve a synthesis of the principles of the new science with the claims of traditional metaphysics which grants the validity of both. While scientific thought has an objective reference it nevertheless fails to think objects as they are, that is, in their individuality, and so cannot contain the totality of truths about objects. The way is thus opened for a metaphysical account of objects, and

for Leibniz this means an account which is essentially Christian.

Like his confrontation with the new science, Leibniz's positive metaphysics develops through an analysis of a concept of unity -- here, the unity of individual being or substance. Following scholastic tradition, Leibniz understands unity in itself as the unity of individual being. And following Thomas Aquinas in particular, he holds that principle of unity is substantial form or soul. However, in the context of Leibniz's thought, the Thomistic doctrine emerges importantly reinterpreted. Whereas for Aquinas unity in itself is a result of substantial form, it is for Leibniz substantial form itself. For him, individual being, substantial form (i.e., soul) and unity in itself are one and the same. Leibniz's answer to the question: "What is true being and true unity?" is: "true being and true unity is soul." In a word, Leibniz's positive metaphysics is an attempt to accomplish the age old task of philosophy -- to establish that our humanity is grounded in being.

What follows is a summary of the plan and organization of the work.

In chapter II, "The Scholastic Background" we will present an analysis of the scholastic concept of transcendental unity, in the words of Aquinas, "the unity which is

interchangeable with being". We will see that, for Aquinas, "unity" in this sense does not refer to numerical oneness; rather, it refers to being as it is determined by undividedness. Stated otherwise, to be a unity in this sense is to be undividedly.

We will also explicate Aquinas's original doctrine that the principle by which a substance is made to have its being undividedly is to deny that it possesses a plurality of substantial forms, or, what amounts to the same thing, it is to deny that the condition of its being is the condition of the being of distinct, that is, non-identical, substances. In chapter IV, "Unity and Being" we will see that the unity to which Leibniz constantly refers in his writings is the transcendental unity of the scholastics and that, like Aquinas, he adopts the principle of substantial form as that by which substance is made to be transcendentally one.

In **Chapter III**, "Unity and the Continuum", we will present an analysis of Leibniz's critique of the positions held by the Cartesians and by the Gassendists on the question of the composition of continuous substance. In these critiques we will see an application of Leibniz's general argument for his view that substances must be indivisible, and also for his view that matter cannot be the principle of such indivisibility. Also, our discussion of the problem

of the composition of continuous substance will provide us with an opportunity to examine the context in which Leibniz's doctrine of substantial indivisibility can be easily misunderstood to mean that substances cannot be divided in the way in which a continuum may be divided. In his Logic and Reality in Leibniz's Metaphysics, G. H. R. Parkinson presents this reading of Leibniz's doctrine of substantial indivisibility and in the final chapter, "Some Recent Interpretations" we will show that Parkinson's reading cannot be maintained.

We mentioned in the paragraph just above that Leibniz's critique of the positions taken by the Cartesians and by the Gassendists on the question of the composition of the continuum is but a special application of his general argument for the indivisibility of substance. In chapter IV, "Unity and Being" we will present an expository analysis of this general argument on the basis of which we will show that Leibniz's concept of substantial unity is precisely the concept of unity to which Aquinas referred as the "unity which is interchangeable with being". It is in this chapter as well that we will see that, also like Aquinas, Leibniz holds that the unity requsite for substantiality is the unity of substantial form, or soul. Since the principle conclusions of our research are contained in this chapter, a brief summary of its divisions

is in order.

The material of chapter IV, is divided into three sections. In the first section, "Unity and Bodies: The Issue in the Foreground" we will trace the course of Leibniz's discussion with Arnauld over the question of the unity of bodily substance. We will see that, according to Leibniz, if bodies have substantiality, then they must also have unity, and furthermore, that by which such unity is constituted is substantial form. In this section also, we will introduce Leibniz's concept of a being by aggregation, what he otherwise calls a "phénomène bien fondé", and adduce the texts which establish that numerical oneness is the mode of unity of an aggregate, not that of a substance.

In section two, "The Monad as Unum Transcendens" we will present our exposition of Leibniz's argument for the indivisibility of substance and show that, for him, substantial unity is, as we have claimed, the transcendental unity of which Aquinas spoke. Our exposition will require the development of a partial analysis of Leibniz's concept of a being by aggregation. We shall see that for Leibniz, this manner of being, together with the manner of unity appropriate to it, namely, numerical oneness, stands in systematic opposition to the manner of being and unity of a substance. With this analysis we will be in a position

to understand the key statement of Leibniz's argument for the unity of substance, namely, that without substantial unity there is no foundation for being by aggregation.

In the third and final section of this chapter, "Unity and Phenomenality" we will complete our analysis of Leibniz's concept of being by aggregation. We will see that, for him, all being is either as the being of a substance or as the being of an aggregate. Also, it is in this section that we will see that the unity of the aggregate, its numerical oneness, is the numerical oneness of the thought which, with respect to an abstract concept such as time, motion, etc., thinks the many reals as singly real. We will see that Leibniz considers these various abstractions to be so many manners of relation and that the reality of relation, and so the reality of the aggregate constituted by relation, is the reality of the divine thought. In this way, Leibniz answers a perennial question of philosophy, namely, "what is the manner of reality of sensible things?"

In chapter V , "Some Recent Interpretations" we will present a critical evaluation of the interpretations of Leibniz's doctrine of the unity of substance as found in Betrand Russell's Critical Exposition of the Philosophy of Leibniz and G. H. R. Parkinson's Logic and Reality in Leibniz's Metaphysics.

We shall see that Russell interprets Leibniz's doctrine

of the unity of substance as the assertion that to be and to be numerically one are the same. On the basis of this interpretation, Russell charges Leibniz with maintaining an inconsistent set of premisses, and this charge of inconsistency is the major critical contribution of Russell's book. We will show that Russell's interpretation of Leibniz doctrine of substantial unity is a mis-reading of that doctrine and that, therefore, his charge of inconsistency, based on that mis-reading, is unsuccessful.

Also in this chapter, we will see that according to G. H. R. Parkinson, substances are indivisible for Leibniz in the sense of "indivisible" which is opposed to the sense in which a continuum may be said to be divisible. Since, for Leibniz, as we will see, substantial indivisibility <u>is</u> substantial being, Parkinson's definition of substantial indivisibility, and those like it, leave us saying that substantial indivisibility for Leibniz is the incapacity for distribution into parts. We will see that in terms of Leibniz's argument for the indivisibility of substance, this interpretation cannot be sustained.

In the concluding chapter, finally, we will apply the results of our research to the traditional problems of the self as formulated by Hume in his <u>Treatise of Human Nature</u>, and Kant in his <u>Critique of Pure Reason</u>. Also, we will suggest some possible applications of our work to the

general problem of interpretation.

[1]Aristotle, The Basic Works of Aristotle, ed. and with an Introduction by Richard Mckeon (New York: Random House, 1941), p. 839.

[2]Ibid., p. 727.

[3]Ibid., pp. 783-784.

[4]Plato, Plato: The Collected Dialogues, ed. Edith Hamilton and Huntington Cairns (New York: Pantheon Books, 1961), p. 744.

[5]Plotinos, The Enneads, 3d. ed., trans. Stephen Mckenna, rev. B. S. Page with a Forward by E. R. Dodds and an Introduction by Paul Henry (London: Faber and Faber Ltd., 1962), p. 614.

[6]Maurice Blondel, Une Enigme historique: La "Vinculum substantiale" d'apres Leibniz et l'ebauche d'un realsime superieur (Paris: Gabriel Beauchesne, 1930).

[7]Gregory Baum, Man Becoming: God in Secular Experience (New York: Herder and Herder, 1970), see chap. 1 "The Blondelian Shift".

[8]See Armand Maurer, Medieval Philosophy (New York: Random House, 1962), pp. 213-216.

[9]Gottfried Martin, Introduction to General Metaphysics, trans. Eva Schaper and Ivor Le Clerc (London: George Allen and Unwin Ltd., 1961), pp. 18-19.

C H A P T E R I I

THE SCHOLASTIC BACKGROUND

In this chapter we shall explicate Thomas Aquinas's analysis of the concept of unity in preparation for our investigation into Leibniz's systematic development of this concept. As we noted in the Introduction, the significance of Thomas Aquinas for this investigation derives from the fact that Leibniz adopted an integral part of Aquinas's analysis; namely, that it is the substantial form of a being which makes it to be a unity. Aquinas's analysis breaks down into three parts: the distinction between "the one which is convertible with being," i.e., transcendental unity, and "the one which is the principle of number"; the analysis of the concept of transcendental unity; and finally, the relation between a being's unity and its substantial form. Our exposition will rely primarily on texts from his commentary on Aristotle's Metaphysics. Relevent material is also to be found in the Summa Theologiae, De Potentia, and De Veritate, and we shall draw on these texts as well.

For Aquinas, unity and being are themselves identical though they may be distinguished conceptually. The unity which is identical with being is not unity in the sense of

numerical oneness but, rather, unity in the sense of undividedness or indivision. Commenting on Avicenna's view that these two modes of unity are indistinguishable, Aquinas writes:

> The kind of unity which is the principle of number differs from that which is interchangeable with being; for the unity which is interchangeable with being signifies being itself, adding to it the notion of undividedness, which since it is a negation or a privation, does not posit any reality added to being. . . . However, the kind of unity which is the principle of number adds to substance the note of a measure, which is a special property of quantity and is first found in the unit.[1]

The thesis that the kind of unity which is convertible with being is not the kind which is the principle of number is of fundamental importance to Aquinas. In the following passage from the Summa Theologiae, he offers an argument in its support:

> Avicenna, . . . considering that the one which is the principle of number added a reality to the substance of a being (otherwise number made of unities would not be a species of quantity), thought that the one convertible with being added a reality to the substance of beings; as white adds to man. This, however, is manifestly false, inasmuch as each thing is one by its substance. For if a thing were one by anything else but its substance, since this again would be one, supposing it were again one by another thing, we should be driven on to infinity. Hence we must adhere to the former statement; therefore we must say that the one which is convertible with being does not add a reality to being; but that the one which is the principle of number does add a reality to being, belonging to the genus of quantity.[2]

The conclusion, not made explicit in the passage, is that since the one which is convertible with being does not add a reality to being while the one which is the principle of number does add a reality to being, it follows that the one which is convertible with being is not the one which is the principle of number. The argument may be most plausibly reconstructed as follows: Assume that unity is convertible with being and that the kind of unity which is convertible with being is identical with the kind which is the principle of number. It follows that every being is one in virtue of being a principle of number. But, a being which is one in virtue of being a principle of number is not one in virtue of its substance but is one in virtue of a reality added to its substance, that is, is accidentally one. But, by adding a reality to the substance of a being, a new being is created and this new being is one. But every being is one in virtue of being a principle of number, etc. As Aquinas makes clear in the first of the above passages, unity is convertible with being in the sense of 'unity' in which it signifies undivided being. However, since undividedness is a privation, it does not add a reality to being.

Though the kind of unity which is the principle of number differs from the kind which is convertible with being, there is nevertheless "a kind of likeness" between them. He says:

> But though this character of a measure belongs to the unity which is the principle of number, still by a kind of likeness it is transferred to the unity found in other classes of things.[3]

According to Aquinas, Aristotle shows that this is so in Bk. I, ch. (i), l. 1052a 15-20. In this section, Aristotle repeats the list he first presents in Bk. Δ, ch. (vi) of the senses of 'one' in which things which are one by their own natures may be said to be so. In Aquinas's text, Aristotle says that in one sense of 'one,' what is continuous by nature may be said to be one; in another sense, that which is a whole may be said to be one (since the movement of both sorts of things is indivisible with respect to place and time); in another sense, the singular thing may be said to be one (since it is numerically indivisible); and in yet another sense, the universal may be said to be one (since it is specifically indivisible). According to this, Aquinas says, the character of a measure is found in any class of things. His point seems to be that the character of a measure is not confined to the kind of unity which is the principle of number but, rather, accompanies all the different kinds of unity; e.g., the continuous by nature, that which is whole, the singular thing, the universal, and so on. He continues:

> But this character of a measure is a natural consequence of the note of undividedness. Hence the term one is not predicated in a totally equivocal sense of the unity which is inter-

> changeable with being and of that which is the principle of number, but it is predicated of the one primarily and of the other secondarily.[4]

His view seems to be that the concept of undividedness involves the concept of a measure, and hence, that the two senses of 'one' are similar in meaning. In its primary sense, however, to be one is to be undivided; only in a secondary sense is it to be the principle of number.

According to Aquinas, the thesis that in its primary sense, to say of something that it is one is to say that it is indivisible, is sustained by Aristotle. Commenting on l. 1016b 3-10 of Bk.Δ, ch. (vi), he says:

> He accordingly says, first, that it is evident from what preceded that things which are indivisible in every way are said to be one in the highest degree. For all the other senses in which things are said to be one are reducible to this sense, because it is universally true that those things which do not admit of division are said to be one insofar as they do not admit of division.[5]

The point, not to be found in the Aristotelian text, is that since every indivisible thing may be said to be one in the respect in which it is indivisible (for example, Plato and Socrates are undivided insofar as they are man and so are one in humanity--Aquinas's example), it follows that in its primary sense (i.e., the sense to which all the others can be reduced) to say of something that it is one is to say that it is indivisible. Notice that the universality of this sense of 'one' is being taken as proof of its pri-

macy with respect to the other senses. The argument seems to be that since, for example, both one continuum and one whole may be said to be one in the respect in which both are indivisible but may not both be said to be one in the respect in which both are either a continuum or a whole (since a continuum may not be said to be one in the respect in which it is a whole, and vice versa), it follows that in its primary sense, to say of something that it is one is to say that it is indivisible.

In its primary sense then, 'one' means the same as 'indivisible,' and it is in this sense that every being may be said to be one. That is, whatever is is indivisible and, moreover, its being is identical with its indivisibility. It would be a mistake, however, to suppose that the concept of indivisibility must be taken as primitive in Aquinas's account of transcendental unity. On the contrary, he offers a sophisticated analysis of it. Indeed, that he developed an analysis of the concept of indivisibility is suggested by what we have seen so far. For clearly, he cannot say that 'indivisible' means "incapable of distribution into parts," though this, or something very like it, is its usual meaning. For on this definition, to say of something that it is indivisible is just to say that its parts must exist as numerically one, as opposed to severally, i.e., as opposed to numerically several. But as we

have seen, Aquinas is at pains to point out that indivisibility is not the same as numerical oneness. Our task now is to discover how Aquinas distinguishes between the two.

Recall that for Aquinas, undividedness, or indivisibility, is a 'privation'; that is, to say of something that it is undivided is not to attribute a property to it but is, rather, to say that it lacks a certain property, namely, dividedness. Clearly, this kind of division cannot be the same as numerical division; for if it were, indivisibility would be the lack of numerical plurality, and this is the same as the possession of numerical oneness. Our task, then, is to discover a distinction between division as opposed to the kind of unity which is convertible with being and division which is opposed to the kind of unity which is the principle of number. In the following passage Aquinas draws just this distinction:

> Now the division which is implied in the notion of the kind of unity which is interchangeable with being is not the division of continuous quantity, which is understood prior to that kind of unity which is the basis of number, but is the division which is caused by contradiction, inasmuch as two particular beings are said to be divided by reason of the fact that this being is not that being.6

The passage is a difficult one and it will not be evident that our interpretation of it is correct until we have examined additional passages. That he speaks of this kind of division as 'implied' in the notion of transcendental

unity is significant, but we shall not consider it at present. Finally, it will be convenient to refer to the kind of division which is implied in the notion of transcendental unity as 'transcendental division,' though, to our knowledge, Aquinas does not use the term. Now, notice that the things which he speaks of as being divided by transcendental division are particular beings. Moreover, notice that the notion of transcendental division is being explained in opposition to the notion of division of continuous quantity. For Aquinas, there are two species of quantity: continuous quantity and discrete quantity. Discrete quantity is "that which results from homogeneous parts which are actually distinct (numerical quantity)."[7] Inasmuch as discrete quantity is as such in a state of division, it cannot be further divided. (To divide the parts of a discrete quantity is to divide a continuous quantity.) Continuous quantity thus remains as the only species of quantity which admits of quantitative division. The point is an important one, for continuous quantity is not being mentioned as an example of one of several kinds of quantity which admit of quantitative division. Rather, it is being mentioned as the object appropriate to the quantitative mode of division. That is, continuous quantity is that which admits of quantitative division. Since the notion of transcendental division is being explicated by way of opposition to the

notion of quantitative division, one would expect Aquinas to mention the object appropriate to the transcendental mode of division as well. As we have noted, he mentions particular beings as being divided by transcendental division, and in light of the context in which this occurs, we should interpret him to mean that particular beings are the objects appropriate to transcendental division; that is, transcendental division is the mode of division which obtains between particular beings. Now, he says that particular beings may be said to be divided "by reason of the fact that this being is not that being" and that the division between particular beings is "caused by contradiction."[8] His first point seems to be that to say of two particular beings that they are divided is just to say that one is not identical with the other. Second, that they are not identical is "caused by contradiction." Now, in one of the senses in which Aquinas used 'cause,' it may be defined as "that which explains or gives the reason of a thing."[9] His point is--and this will be borne out by our subsequent investigation--that for any two particular beings, the assertion of their identity involves the denial of a necessary truth.

Though we have pursued Aquinas's analysis of transcendental unity to some length, we are still far from a complete exposition of it. We have seen that to say of par-

ticular beings that they are divided is to say that they are not identical. Shall we accordingly define 'indivisible being' as "a being incapable of distribution into two beings"? The most obvious difficulty with this definition is that it seems not to distinguish transcendental unity from numerical unity. For clearly, to say of a particular being that it is incapable of distribution into two or more particular beings is just to say that it must exist as numerically one being, as opposed to existing as numerically several beings. Perhaps less obviously, the definition does not make clear in what respect a particular being is incapable of distribution into two or more particular beings. For example, might we not say that by sawing a desk in half we thereby distribute it into two particular beings, namely, two desk halves? Notice that the example interprets "division of the desk" as "division of the desk in respect of its being a continuous quantity" and so interpreted, it is simply false to say that the desk is indivisible. As we have noted, continuous quantity is not the object appropriate to transcendental division, and the task now is to discover the respect in which two particular beings may be said to be transcendentally divided (and so the respect in which a particular being may be said to be transcendentally indivisible).

The following passage from De Potentia contains an account of the respect in which a particular being may be said to be indivisible, and with this, Aquinas's analysis is complete. Addressing himself to the thesis that "there is no plurality but number that is a species of quantity," he writes:

> Now this is clearly false. For since division causes plurality and indivision unity, we must judge of one and many according to the various kinds of division. Now there is a kind of division which altogether transcends the genus of quantity, and this is division according to formal opposition which has nothing to do with quantity. Hence, the plurality resulting from such a division, and the unity which excludes such a division, needs must be more universal and comprehensive than the genus of quantity.10

First, it is clear that in this passage, Aquinas is speaking of the same kind of division of which he spoke in the previous passage from his commentary on the Metaphysics, that is, "the division which is implied in the notion of the kind of unity which is interchangeable with being."11 The present passage, however, contains an entirely new point, namely, that transcendental division is "division according to formal opposition," that is, division by reason of formal opposition. This idea of division by formal opposition is the heart of Aquinas's analysis of transcendental unity. The word 'formal' here means, of course, that which pertains to form, and in the passage Aquinas is thinking of substantial form. Thus, before we can under-

stand what he means by 'formal opposition,' we must first understand his concept of substantial form. We will explicate this concept in two stages: first we will provide a general understanding of the concept through the idea of substantial change, and then we will turn to Aquinas's specific development of the concept.

As a commonplace among the schoolmen, the concept of substantial form stands in contra-distinction to the concept of accidental form, and it is through this distinction that we shall approach the concept. The distinction is easily understood in terms of another equally common one, namely, that between substantial and accidental change. We shall begin with the latter of these since it is the more readily comprehensible.[12]

Consider, for example, the change which a piece of marble undergoes by which it becomes a statue. Now, in all change, substantial as well as accidental, we can distinguish between that from which the change proceeds, here, the marble, and that towards which the change proceeds, here, the statue. Further, in all change there must be something which survives, that is, something physically present before the change begins as that from which the change proceeds, here, the marble, and also physically present after the change has been completed in that towards which the change proceeds, here, again, the marble.

Were this not so, it could not be said that a change had taken place for there would have been nothing which changed. In the present case, were there no marble physically present in the statue, the statue could not be said to have been produced by a change in marble. In general, were there no 'that from which' present in the statue, it could not be said to have been produced by change at all; rather, we should have to say that it was produced by creation.

Notice that what survives in this case, namely, the marble, is a complete natural substance, that is, its existence does not depend upon its having the form of the statue. This is true of marble in general, and were it not, we should not expect to find marble in any form other than that of a statue. It is because the marble present in the statue is a complete natural substance that the change may be said to be an accidental one. In general, a change is accidental if and only if what survives the change is a complete natural substance. In the terms of this analysis, the concept of an accidental form may easily be understood: it is, simply, the form acquired in an accidental change.

Let us now consider an example of a substantial change: the change which a seed undergoes by which it becomes an animal. What, we may ask, survives the change in this case? It cannot be the seed, for the seed is not physically pres-

ent in the animal. Yet, something must have survived for otherwise it could not be said that a change had taken place. The natural reply is to say that while the seed itself does not survive, some constituent of it does, that is to say, some constituent of the seed survives to become a constituent of the animal. This underlying substrate of change is called 'prime' or 'first' matter. Considered in itself, prime matter is not a complete natural substance; it is present in that from which the change proceeds as well as in that towards which the change proceeds only as a constituent of a complete natural substance. Prime matter is "pure potentiality" and has no actuality apart from a relation to a determining form. Thus, we say that a change is substantial if and only if coincident with the completion of it, a complete natural substance first begins actually to be. And now, simply, the form acquired in a substantial change is a substantial form. For Aquinas, every material substance is composed of prime matter and substantial form. We turn now to Aquinas's analysis of the concept of substantial form.

One of Aquinas's most innovative theses was that each substance has only one substantial form. The contrary thesis--that in a single substance there can be a plurality of substantial forms--is most readily identified with the Franciscan school which adopted the doctrine following its

development at the hands of St. Bonaventure.[13] Briefly, the doctrine is that each substance is composed of prime matter successively determined by a plurality of forms all of differing degrees of perfection. That is, the most perfect form of a given substance informs its prime matter under the determination conferred by the next most perfect form, and so on down to the least most perfect form which informs prime matter per se. The doctrine is easily understood from the point of view of the early Platonists. Suppose that there are such things as Platonic forms and that they are arranged in a hierarchical order according to their differing degrees of perfection. Now, on this view, to say, for example, that Socrates is a human is to say that he participates in the form of humanity, and to say that he is an animal is to say that he participates in the form of animality. Since humanity is a greater perfection than animality, it is natural to suppose that no being can participate in the form of humanity while not also participating in the form of animality. Thus, only having been determined in respect of animality may Socrates be determined in respect of humanity; and this is to suppose in him a multiplicity of hierarchically arranged forms.[14]

Aquinas's argument against the doctrine of the plurality of substantial forms is a simple one. Recall that for Aquinas, coincident with the acquisition of substantial

form by prime matter, a natural substance first begins actually to exist. More precisely, substantial form is that which confers determinate actuality on prime matter ('determinate' in the sense that the individual substance thus constituted has a unique set of features), and, for a given individual substance, the actuality of its prime matter is its esse. Clearly, on this account, if the least perfect form of a given substance is a substantial form, then the remaining forms must be accidental ones since they inform a complete natural substance, that is, they inform a substance already constituted as to its nature. Stating the point in the form of its contrapositive, Étienne Gilson succinctly writes: "It is impossible by definition to insert between the substantial form and its matter a number of intermediate substantial forms."[15] It follows from this that a given substance can have only one substantial form. Aquinas's doctrine of the unicity of the substantial form is a novel one. Maurice De Wulf reports that Aquinas introduced the doctrine "in complete opposition to the ideas of his contemporaries and predecessors,"[16] and speaking confidently of the history of its development, he writes:

> Thomas learned it neither from his master, who adopted a different solution, nor from the Averrhoists, but owed it to his personal penetration of the peripatetic genus of scholasticism.[17]

As a final point, we should note that for Aquinas, the form (whether substantial or accidental) of a composed substance is individualized by the matter which it informs. By 'individualized' or 'individual' form we mean one the type of which may be repeated but which itself may not be repeated. That is, though there may be many occurrences of the same type of individual form, each may occur only once. For example, the whiteness of this page is not repeated on the next page, though the same type of form, namely, whiteness, occurs on both pages. The doctrine follows as a consequence of Aquinas's view that "designated matter" or matter "considered under determined dimensions" is the principle of individuation. (Matter "considered under determined dimensions" is matter considered as occupying a determinate region of space.) Now, composed substances are individuals, and the individuality of a composed substance consists precisely in the determinate dimensionality of its matter. But individual or designated matter individualizes the forms of which it is the subject. Hence, the forms of a composed substance are individual forms.[18]

Aquinas's doctrine of the unicity of the substantial form is an integral part of his analysis of transcendental unity. We have already seen that the notion of form is involved in his account of transcendental division,[19] and the

following passage explicitly relates the notion of form and the notion of transcendental oneness. He writes:

> Nothing is absolutely one (*simpliciter unum*) except by one form, by which a thing has being; because a thing has both being and unity from the same source, and therefore, things which are denominated by various forms are not absolutely one; as, for instance, *a white man*.[20]

That Aquinas is here using "absolutely one" to mean the same as "transcendentally one" is shown by his offering the fact that everything has both its being and its unity from the same source as a reason for asserting that nothing is absolutely one except by one form. For clearly, if the source of the being of a thing is identical with the source of its unity (in some sense), then whatever has being also has unity (in that sense); and the only sense of 'unity' in which whatever is can be said to be a unity is its transcendental sense. And, in the absence of a reason to believe the contrary, it is correct to suppose that the sense which 'unity' has in the sentence asserted to be true is the same as the sense it has in the sentence which gives the reason for asserting it to be true. Aquinas's point, then, is that since a thing has both its being and its (transcendental) unity from the same source (as we would expect, since unity is identical with being *in rem*), and since it is a form and one form alone by which a thing has being, namely, its substantial form, it follows that it is a form and one form alone by which a thing has its unity,

again, its substantial form. It follows from this, he says, that things which are denominated by several forms, for example, a white man, are not absolutely one. His point is that such things are only accidently one; it is only by accident that something has both the form of whiteness as well as the form of manness.

Having seen that Aquinas's doctrine of the unicity of the substantial form is an integral part of his analysis of transcendental unity, our task is to explicate the exact relation between the two. We shall begin by completing our account of his analysis of transcendental division.21

Recall that we said that the substantial form is that which confers determinate actuality on prime matter and that for a given substance, the actuality of its prime matter is its esse.22 As we have seen, it follows from this that it is logically impossible for more than one substantial form to occur in a single being. This is impossible, we said, since, given the definition of 'substantial form,' if X is the substantial form of A, then every other form of A must be an accidental one, since none is such that the existence of A depends upon its having it. There is another reason for saying this. If the esse of a thing is given to it by its substantial form (in the sense specified just above), then to say that a plurality of substantial forms can occur in a single being, A, is to say that

the esse of A is plural. And this, in turn, is to say that A is not self-identical. To use an example Étienne Gilson employs in a similar context, were there a substance denominated by the substantial form of gold and also by the substantial form of silver, it would have the being both of gold and also of silver. In answer to the question: "What is it?" we should have to say both that it is gold, because gold is what this substance is under the denomination of the substantial form of gold, and also, and for the corresponding reason, that it is silver, and consequently not gold. What is a mixture of gold and silver is not either gold or silver. Gilson writes:

> That which is, is bound to be one, because it is contradictory to conceive as belonging to a certain being something other than that being. Here is a lump of gold with a streak of silver in it; its being may be that of a jewel, it cannot be that of gold. If I want to name the beings which enter into its composition, I must name at least two, and say: this is gold and this is silver. For indeed, gold is only inasmuch as it is gold.[23]

We are now in a position to define 'formal opposition' and to explicate the meaning of Aquinas's assertion that particular beings are divided by reason of formal opposition.[24] First, we should recall that transcendental division is a mode of division which obtains between particular beings,[25] and that to say of two particular beings that they are divided is just to say that "this being is not that being," that is, that they are not identical.[26] Par-

ticular beings may be divided by reason of the division of continuous quantity (for example, two desk halves), or by reason of formal opposition. Only division by reason of formal opposition is transcendental division.

Let us define 'formal opposition' as 'the occurrence of a plurality of individual substantial forms in a single being.' As we have seen, possession by a single being of a plurality of individual substantial forms is impossible since the *esse* of a single being cannot be plural. Clearly, if possession by a single being of a plurality of individual substantial forms is impossible, then for any two particular beings A and B, if A and B are identical, then there exists a single being in which there occurs a plurality of individual substantial forms, namely, the individual substantial form of A and the individual substantial form of B. But, if in a single being there occurs a plurality of individual substantial forms, then the *esse* of that being is plural, and therefore, that being is not self-identical. Thus, to say that A and B are divided by reason of formal opposition is to say that A and B are not identical since, necessarily, no single being possesses a plurality of individual substantial forms; and this is so since, necessarily, every being is self-identical. Notice that since the identity of A and B is impossible, their non-identity is necessary. That is, Aquinas seems to hold that for any particular beings A and

B, if A and B are not identical, then, necessarily, A and B are not identical.[27]

We can now also see what Aquinas means when he says that particular beings are divided by reason of contradiction.[28] When we assert that A and B are divided by reason of formal opposition, we are asserting that A and B are necessarily non-identical since possession by a single being of a plurality of substantial forms is impossible. When we assert that A and B are divided by reason of contradiction we are asserting that, necessarily, A is not identical with B since it is impossible that a single being possess a plurality of individual substantial forms (or better, since, necessarily, a single being cannot possess a plurality of substantial forms). The difference between the two is that in the former, the modalities are being asserted de re, while in the latter they are being asserted de dicto.

Transcendental division, then, is division by reason of formal opposition. More precisely, for any two particular beings A and B, A is transcendentally divided from B if and only if the being which would result, were A and B identical, possesses a plurality of substantial forms. Recall that, according to Aquinas, to say of a particular being that it is transcendentally one is not to attribute a property to it but, rather, it is to deny that it is transcendentally divided.[29] As we may now see, his point

is that to say of a particular being that it is transcendentally one is merely to deny that it possesses a plurality of individual substantial forms.

Our exposition of Aquinas's treatment of unity is now all but complete. It remains to be shown that his analysis of transcendental unity is such as to enable him to distinguish between transcendental unity and numerical unity. It would seem that it does not. We have seen that to say of a particular being that it is transcendentally one is to deny that it possesses a plurality of individual substantial forms. But this denial seems to be the same as the assertion that it possesses numerically one substantial form. That is to say, the oneness of an individual substantial form of a being <u>is</u> the oneness which is convertible with that being. Hence, the oneness convertible with being is numerical oneness.

In his paper, "Form and Existence," Peter Geach argues that we must distinguish between two senses of 'form' in Aquinas. In one of these, to speak of the form of a thing is to speak of "something individual, something that is no mere multipliable or expressible by a predicate than Socrates himself is."[30] In this sense, 'form' means the same as what we mean by 'individualized form.' In its second sense, however, to speak of the form of a thing is to speak of something which <u>can</u> be multiplied. Consider the sentence:

"That by which Socrates is wise is also that by which Plato is wise" (or, better, "What Socrates must be if he is wise is also what Plato must be if he is wise"). What the phrase "that by which" refers to here is an example of what 'form' refers to in its second sense. This is the distinction we previously illustrated when we said that, for example, though the whiteness of one page may not be repeated on another, a form of the same type occurs on both pages. We might say that in the second of Geach's senses, 'form' means the same as 'form-type.' For our purposes, the most important feature about form-types is that, to use Geach's words, they are "indifferently one or many." He writes:

> The common nature that the predicate 'man' (say) stands for can be indifferently one or many, and neither oneness nor manyness is a mark or note of human nature itself.31

Aquinas makes the point quite clearly in the following passage from De Ente et Essentia:

> If one should ask whether the nature [considered as a whole] can be said to be one or many, neither should be allowed, because each is outside the content of [for example] humanity and either can be added to it. For if plurality were of its content, it could never be one, as it is in Socrates. Similarly, if oneness were of its content, then the nature of Socrates and Plato would be one and the same, and it could not be plurified into many individuals.32

It will be useful to recall at this point that Aquinas says that there is a "kind of likeness" between the sense in which a being may be said to be transcendentally one and

the sense in which it may be said to be numerically one, though the former sense, he says, is the primary one.[33] Recall that the kind of division which is opposed to numerical oneness is the division of continuous quantity. Now, it is continuous quantities of matter which admit of numerical division. Speaking of the kind of unity which is the principle of number, Aquinas writes:

> And it is described as the privation or negation of division which pertains to continuous quantity; for number is produced by dividing the continuous. Hence, number belongs to mathematical science, whose subject cannot exist apart from sensible matter but can be considered apart from sensible matter. But this would not be so if the kind of unity which is the principle of number were separate from matter in being and existed among the immaterial substances, as is true of the kind of unity which is interchangeable with being.[34]

Number cannot exist apart from matter; rather, it is produced by the division of continuous quantities of matter. Let us say that A and B result from the numerical division of a continuous quantity of matter C, if and only if both A and B are portions of C, and A and B have no identical limits. Also, let us say that a continuous quantity of matter is numerically one if and only if each of its portions has a limit(s) identical with the limit(s) of some other portion(s).

We said earlier that designated matter, or matter considered under determined dimensions, individualizes the forms (substantial as well as accidental) of which it is

the subject.[35] That is, each of the forms of a material substance is countably one. We can now see why this is so. It is because the concepts of numerical oneness and manyness apply to matter that they also apply to the forms of which it is the subject. Joseph Bobik writes:

> It is because that matter of the physical universe is three-dimensionally extended that it can be divided into diverse parts, each part of which can be counted as one (this is what is meant by 'designated matter'), and into each of which, if subjected to an appropriate process, a form of the same type can be introduced.[36]

However, the concepts of numerical oneness and manyness do not apply to what we have called 'form-types.' For example, the type 'man' may be individualized in many actually divided, and so numerically plural, matters, or it may be individualized in a matter which is actually undivided, and so numerically one. As such, however, the type 'man' is neither numerically one nor many.

That the concepts of numerical oneness and manyness do not apply to form-types enables us to provide a definition of 'transcendental oneness' which distinguishes between transcendental oneness and numerical oneness. Again, we shall begin with the notion of transcendental division. As Aquinas states, the kind of division which is implied in the notion of transcendental unity is not the division of a continuous quantity,[37] and we have said that the objects of transcendental division are particular beings, that is,

particular beings are to transcendental division as continuous quantity is to numerical division. While this is correct so far as it goes, it overlooks the important point that the division which obtains between particular beings is the division of a substantial form-type. That is, for any two particular beings A and B, A is transcendentally divided from B if and only if the individual substantial form of A is numerically distinct from the individual substantial form of B, that is, each counts as numerically one individual substantial form.[38] Let us confine our attention to a case in which A and B individualize the same substantial form-type, say, the type man. The type man is divided inasmuch as it is individualized in A and again in B. Now, the division of the substantial form-type man in A and B is transcendental division; that is, what is transcendentally divided here is the substantial form-type man. Note, however, that though the type man is divided in A and B, it is not thereby made such that the concept of numerical plurality is applicable to it.

Let us define 'transcendental oneness' as follows: to say of a particular being A that it is transcendentally one is to say that its substantial form-type is undivided in it, (this is just to say that A does not individualize its substantial form-type twice). Note, however, that though the substantial form-type of A is individualized in A only

once, it (i.e., the form-type) is not thereby made such that the concept of numerical oneness is applicable to it. An undivided form-type is not a numerically singular form-type; just as a divided form-type is not a numerically plural one. We thus obtain a concept of undividedness which is not also a concept of numerical oneness, namely, the concept of undividedness which applies to the substantial form-type of a particular being. The undividedness, or oneness, of the substantial form-type of A is the undividedness convertible with the being of A.

Note that if A is transcendentally one, then it has numerically one individual substantial form. This result accords with Aquinas's claim that "the character of a measure is a natural consequence of the note of undividedness."[39] We can now also see the point of Aquinas's remark that there is a similarity in meaning between the sense in which a particular being may be said to be transcendentally one and the sense in which it may be said to be numerically one. Just as the division which obtains between particular beings is the division of a substantial form-type, so too, the undividedness of a particular being is the undividedness of its substantial form-type. But the undividedness of a particular being is the numerical oneness of its individual substantial form. Hence, the undividedness of the substantial form-type of a particular being is the numeri-

cal oneness of its individual substantial form. However, though the undividedness of the substantial form-type of A is the numerical oneness of A's individual substantial form, the substantial form-type itself is neither numerically one nor many.

We have now completed our exposition of Aquinas's analysis of unity and are ready to investigate Leibniz's treatment of it. We have obtained a definition of 'transcendental unity,' shown it to be distinct from numerical oneness, and explicated the distinction. What is most important for our study of Leibniz, however, is the explication of the central role which the concept of substantial form plays in Aquinas's analysis of transcendental unity.

[1]Thomas Aquinas, Commentary on the Metaphysics of Aristotle, trans. John D. Rowan, 2 vols. (Chicago: Henry Regnery Co., 1961), 1:224.

[2]Thomas Aquinas, Basic Writings of Saint Thomas Aquinas, ed. and annotated, with an Introduction, by Anton C. Pegis, 2 vols. (New York: Random House, 1945), 1:86.

[3]Aquinas, Commentary, 1:341.

[4]Ibid.

[5]Ibid., 1:339.

[6]Ibid., 2:727.

[7]Henri D. Gardeil, Introduction to the Philosophy of Saint Thomas Aquinas, trans. John A. Otto, 4 vols. (St. Louis: B. Herder Book Co., 1967), 4:303.

[8]See passage at footnote number 6, p. 25 above.

[9]Gardeil, Introduction to Aquinas, 4:300.

[10]Thomas Aquinas, On the Power of God, quoted in Gardeil, Introduction to Aquinas, 4:271.

[11]See passage at footnote number 6, p. 25 above.

[12]The account of substantial and accidental change which follows relies on the exposition in Joseph Bobik, Aquinas on Being and Essence: A Translation and Interpretation (Notre Dame, Ind.: University of Notre Dame Press, 1965), pp. 61-67.

[13]Maurice De Wulf, History of Mediaeval Philosophy, trans. Ernest C. Messenger, 2 vols. (New York: Longmans, Green and CO., 1926), 1:336.

[14]See Étienne Gilson, The Philosophy of Saint Thomas Aquinas, ed. G. Aidan Elrington, trans. Edward Bullough (New York: Random House, 1956, reprint ed., Freeport, N.Y.: Books for Libraries Press, 1970), pp. 212-213 for a more complete explanation of the plurality of substantial forms in the context of early Platonism; see also Maurer, Medieval Philosophy, pp. 213-216 for discussion of the immediate reaction to Aquinas's doctrine of the oneness of

substantial form.

[15]Gilson, Philosophy of Aquinas, p. 213.

[16]De Wulf, Mediaeval Philosophy, 2:31.

[17]Ibid., 2:12.

[18]Bobik, Being and Essence, pp. 142-143, 75-80.

[19]See passage at footnote number 10, p. 29 above.

[20]Aquinas, Basic Writings, 1:705.

[21]See p. 25 above for the beginning of this account.

[22]See p. 34 above.

[23]Étienne Gilson, Being and Some Philosophers, 2d ed. (Toronto: Pontifical Institute of Mediaeval Studies, 1952), p. 11.

[24]See passage at footnote number 10, p. 29 above.

[25]See passage at footnote number 6, p. 25 above.

[26]Ibid.

[27]That is, $(x)\ (y)\ (x \neq y) \rightarrow L(x \neq y)$. The weakest modal system in which this is a theorem is S5 + Identity. The closely related $(x)\ (y)\ (x = y) \rightarrow L(x = y)$ is derivable in T + Identity; see G. E. Hughes and M. J. Cresswell, An Introduction to Modal Logic (London: Methuen and CO., 1968), pp. 189-195.

[28]See passage at footnote number 6, p. 25 above.

[29]See passage at footnote number 1, p. 20 above.

[30]Peter Geach, "Form and Existence," Aquinas: A Collection of Critical Essays, ed. Anthony Kenny, Modern Studies in Philosophy (Garden City, N.Y.: Anchor Books, 1969), p. 38.

[31]Ibid., p. 33.

[32]Bobik, Being and Essence, pp. 122-123.

[33]See passage at footnote number 3, p. 22 above.

[34]Aquinas, Commentary, 1:224.

[35]See p. 35 above.

[36]Bobik, Being and Essence, p. 142.

[37]See passage at footnote number 6, p. 25 above.

[38]This statement merely reformulates the conditions for transcendental division stated on p. 40 above.

[39]See passage at footnote number 4, pp. 22-23 above.

CHAPTER III

UNITY AND THE CONTINUUM

In this chapter we shall take some necessary initial steps towards establishing the thesis that Leibniz's analysis of unity is in important respects identical with Aquinas's. First, we will examine texts in which he professes his concern to introduce the doctrine of substantial forms into post-Cartesian thought and offers his reasons for wishing to do so. Next, we will examine texts in which he applies his analysis of unity to the problem of the composition of the continuum. This last examination is necessary for critical as well as expository reasons. These are as follows.

Both textually and theoretically, the continuum problem is an important locus of Leibniz's analysis of unity and our inquiry into his treatment of this problem will yield substantive results with respect to that analysis. However, strictly from the viewpoint of Leibniz's interpretation, it must on the whole be regarded as unfortunate that he addresses this problem at all, as his treatment of it increases the likelihood of a confusion which, even on its own terms, is already a natural one. For, in a discussion of whether or not continua are infinitely divisible,

one who holds, as does Leibniz, that continua result from indivisible units (monads) as phenomena of them is likely to be understood to mean that these units are indivisible in the sense of 'indivisible' which is opposed to the sense in which a continuum may be said to be divisible. For Aquinas, as we have seen, the kind of divisibility possessed by continua is not the kind opposed to the indivisibility which is interchangeable with being, ("the division which is implied in the notion of the kind of unity which is interchangeable with being is not the division of continuous quantity").[1] It is also not the manner of indivisibility which Leibniz believed monads to have, though we will not establish this until the next chapter. Thus, readers who are familiar with Leibniz's treatment of the continuum problem and consequently are under the (perhaps strong) impression that monadic indivisibility is opposed to the divisibility of continua may wish a thorough discussion of the issue. Indeed, as we shall see in the final chapter, G. H. R. Parkinson, currently one of Leibniz's leading interpreters, holds that monads are indivisible for Leibniz in precisely this manner.

By his own report, Leibniz experienced a decisive turn in this thinking shortly before the composition of the Discourse On Metaphysics (1686) and the correspondence with Arnauld which arose from it, (February, 1686-March,

1690).[2] In an effort to determine what doctrines Leibniz first introduced in the Discourse and correspondence, G. H. R. Parkinson concludes that neither work contains original developments in the areas of logic and theology but does contain an analysis of the concept of an individual substance not to be found in earlier writings.[3] As Parkinson points out, however, only some of the Discourse's doctrines concerning individual substances received their first expression there. The doctrine of the identity of indiscernibles, for example, is not new with the Discourse and correspondence. However, the doctrines that every substance is or is like a soul, that every substance is indivisible, and that each substance expresses the whole universe from its own point of view are original with these writings. According to Parkinson, "although they may be found in sketch form in Leibniz's earlier writings, these doctrines date in their fully-developed form from 1686."[4] Of the three previously mentioned doctrines which are original with the Discourse, the first two mark a point at which scholastic themes emerge in Leibniz's thought, and he himself confirms that they are new elements in his thinking. He opens the first account of his metaphysical system to appear in print, "A New System of the Nature and Communication of Substances, etc." (1695), with the autobiographical remark that

several years earlier he communicated his new system to "one of the greatest theologians and philosophers of our time, who had been told about certain of my opinions by a person of the highest nobility and had found them very paradoxical."[5] The reference is clearly to Arnauld and Hessen-Rheinfels, who served as intermediary in the correspondence between the two philosophers. Leibniz next proceeds to a discussion of the two above-mentioned doctrines that every substance is indivisible and that every substance is or is like a soul. (It is indicative of the importance which Leibniz attributed to these doctrines that their discussion occupies the opening paragraphs of the first printed exposition of his new system.) He writes:

> At first, after freeing myself from bondage to Aristotle, I accepted the void and the atoms, for it is these that best satisfy the imagination. But, in turning back to them after much thought, I perceived that it is impossible to find the principles of a true unity in matter alone or in what is merely passive, since everything in it is but a collection or aggregation of parts to infinity. . . . It was thus necessary to restore and, as it were, rehabilitate the substantial forms which are in such disrepute today, but in a way which makes them intelligible and separates their proper use from their previous abuse.[6]

Like Aquinas, Leibniz relates the concept of unity and the concept of a substantial form; albeit the Leibnizian concept of a substantial form differs (though not wholly) from previous concepts of it. Aquinas receives explicit mention in a similar passage in the Discourse:

> I know that I am advancing a great paradox in pretending to resuscitate in some sort the ancient philosophy, and to recall postliminio the substantial forms almost banished from our modern thought. But perhaps I will not be condemned lightly when it is known that I have long meditated over the modern philosophy and that I have devoted much time to experiments in physics and to the demonstrations of geometry and that I, too, for a long time was persuaded of the baselessness of these "beings" which, however, I was finally obliged to take up again in spite of myself and as though by force. The many investigations which I carried on compelled me to recognize that our moderns do not do sufficient justice to Saint Thomas and to the other great men of that period and that there is in the theories of the scholastic philosophers and theologians far more solidity than is imagined, provided that these theories are employed a propos and in their place.[7]

What is the "previous abuse" of substantial forms to which Leibniz refers and why does he think it paradoxical to reintroduce them into "modern philosophy"? To answer these questions we need only recall that the explanatory use of which the notion of substantial forms was put by Aristotelian philosophers of the sixteenth and seventeenth centuries was one of the many causes of the contempt for scholasticism felt by the scientific community of the day. For example, consider the following 'explanation' of the production of fire offered by the Jesuit Toletus who taught at the Collegium Romanum--Italy's leading university in the sixteenth century--from 1559 to 1569: "The substantial form of fire is an active principle by which fire, with heat for an instrument, produces fire."[8] One is reminded here of the doctors in the third ballet scene of Moliere's

Le Malade Imaginaire who 'explained' that opium produces sleep because of its virtus dormitiva. In answer to the objection that fire does not always produce fire, Toletus writes:

> I reply that there is the greatest difference between the accidental and the substantial forms. The accidental forms have not only a repugnance but a definite repugnance, as between black and white, while between substantial forms there is a certain repugnance but it is not definite, because the substantial form repels equally all things. Therefore, it follows that white, which is an accidental form, results only from white and not from black, while fire can result from all the substantial forms capable of producing it in air, water, or in any other thing.[9]

Against the background of the dazzling success of the new science's quantitative explanation of astronomical, physical, and chemical phenomena, it is not difficult to understand why the persistent efforts of the Peripatetics of the sixteenth and seventeenth centuries to 'explain' natural phenomena in terms of substantial forms and their occult qualities--repugnancies, sympathetic virtues, etc.--were ridiculed by the scientific community. Having summarized some of the efforts of the Aristotelians to explain the magnetism of the lodestone, William Gilbert, a sixteenth century spokesman of the new science, remarks in his De Magnete: "These fights, seditions, conspiracies in a stone, as though it were nursing quarrels as an occasion for calling in auxiliary forces, are the maunderings of a babbling hag. . . ."[10]

In many passages in which he discusses the theory of substantial forms, Leibniz alleges that it is of no use in the explanation of natural phenomena. The following passage from the Discourse is typical of these:

> I grant that the consideration of these forms is of no service in the details of physics and ought not to be employed in the explanation of particular phenomena. In regard to this last point, the schoolmen were at fault, as were also the physicians of times past who followed their example, thinking they had given the reason for the properties of a body in mentioning the forms and qualities without going to the trouble of examining the manner of operation; as if one should be content to say that a clock had a certain amount of clockness derived from its form, and should not inquire in what that clockness consisted.11

We may thus surmise that the "previous abuse" of the theory of substantial forms of which Leibniz speaks was its use by certain Scholastics in their efforts to explain natural phenomena. We can also see why Leibniz acknowledges himself to be advancing a "great paradox" in introducing the theory of substantial forms into modern thought. For, given that for nearly a century past the theory of substantial forms had been an object of derision among the modern philosophers, Leibniz's assertion that the theory, or at least some part of it, could not be dispensed with after all, must have been regarded as paradoxical. But if Leibniz did not revive the theory of substantial forms in order to employ it in the explanation of natural phenomena, what theoretical motivation lies behind his interest in it?

Continuing our quotation of the above passage from the Discourse, Leibniz writes:

> The fact, however, that there was this misunderstanding and misuse of the substantial forms should not bring us to throw away something whose recognition is so necessary in metaphysics.12

We will examine the metaphysical considerations to which recognition of the theory of substantial forms is necessary in the next chapter. At present, we should note Leibniz's recognition that the metaphysical employment of the theory of substantial forms is separable from its supposed scientific employment. In the context of the thought of the seventeenth century, an assertion of the separability of scholasticism's science from its metaphysics is a novelty. For it was generally held, not only by the moderns but by the Scholastics as well, that the downfall of mediaeval science meant the downfall of the metaphysical and psychological doctrines with which it had been linked for centuries. Maurice De Wulf writes:

> The Peripatetics of the seventeenth century defended en bloc the science and philosophy of the Middle Ages as a monument from which not one stone could be detached without ruining the whole edifice. . . . [The scientists] made the philosophy of the scholastics responsible for the vagaries of their science, and threw scorn on both.13

The efforts of both, according to De Wulf, were misconceived:

> The scientists wanted to destroy a still powerful oak tree because it carried dead wood in its branches; the Aristotelians thought that it was

> impossible to do anything to an age-long tree, and that to despoil it of a dried up branch would be to deprive it of its life.14

In De Wulf's eyes, it was the responsibility of the Aristotelians to separate their scientific from their metaphysical doctrines--a responsibility which would have been fulfilled by the scholastics of old:

> The duty of the scholastics was to sacrifice their superannuated science and defend their psychology and metaphysics. The princes of thirteenth century scholasticism would certainly have done so if they had lived at the time of this turning point in the history of the sciences. Well known texts of St. Thomas show that he did not regard all scientific ideas as theses, but rather as hypotheses, and thus he condemned in advance the faults of his successors.15

Recall that having sketched the development of his interest in the theory of substantial forms, Leibniz remarks that the theories of Saint Thomas "and the other great men of that period" possess "far more solidity than is imagined provided that these theories are employed a propos and in their place."16 It is a not unreasonable conjecture that Leibniz owed his recognition of the separability of the metaphysical from the scientific employment of the theory of substantial forms to his study of that mainstream of scholasticism which was fed primarily by Thomas Aquinas.

We have seen that Leibniz relates the concept of unity and the concept of substantial form; indeed, he identifies substantial forms as "the principles of a true unity."17 But what is meant by "true unity" here and how is a sub-

stantial form a principle of such unity?

We turn now to the application Leibniz makes of his analysis of unity to the continuum problem and to how, by virtue of this application, he may be interpreted (in our view, mistakenly) to hold that monadic indivisibility is the indivisibility opposed to the divisibility of continua.

Leibniz developed his general theory of substance, and in particular, his account of the indivisibility of substance, in conscious opposition to the prevailing theories of his day. Of particular concern to him was the failure of these theories to solve the difficulties of the composition of the continuum, to which he frequently referred as 'the labyrinth of the continuum'--the solution to which he claimed as one of the chief merits of his philosophy. Bertrand Russell writes:

> The most distinctive feature of Leibniz's thought is its preoccupation with the 'labyrinth of the continuum.' To find a thread through this labyrinth was one main purpose of the doctrine of monads--a purpose which, in Leibniz's own opinion, that doctrine completely fulfilled. To answer [the question: 'How can that which is continuous consist of indivisible elements'] was, I think, one of the two chief aims of Leibniz's doctrine of substance and of all that is best in his philosophy.[18]

Latta offers the following succinct description of the problem of the continuum:

> How are we to interpret the relation of whole to part so that the continuity or complete unity of the whole shall not be in conflict with the definiteness or real diversity of the parts?[19]

Leibniz was primarily engaged with two theories of bodily substance. The Cartesians held that the essence of bodily substance is extension. In The Principles of Philosophy, Descartes writes:

> The nature of matter or of body in its universal aspect, does not consist in its being hard, or heavy, or colored, or one that affects our senses in some way or other, but solely in the fact that it is a substance extended in length, breadth, and depth.[20]

In consequence of this view, Descartes and his followers denied the possibility of empty space; for since space is identical with matter, there can be no space where there is no matter. The Gassendists, on the other hand, with whom Hobbes, and later Huygens and Newton aligned themselves, believed that bodily substance is composed of indivisible, perfectly hard atoms, separated from one another by empty space. In The Syntagma, Gassendi writes:

> . . . it can be admitted that atoms are the primary form of matter, which God created finite from the beginning, which he formed into this visible world, which, finally, he ordained and permitted to undergo transformations out of which, in short, all the bodies which exist in the universe are composed.[21]

(For present purposes, Spinoza's conception of substance as "that which is in itself and is conceived through itself, in other words, that of which a conception is formed independently of any other conception"[22] can be classed with Descartes' as, in Latta's words affirming "the unity and continuity of the whole at the expense of the reality of

the parts").[23] According to Latta, Leibniz endeavored to reconcile these opposing conceptions of substance:

> The philosophical work of Leibniz was an endeavor to reconcile the notion of substance as continuous with the contrary notion of substance as consisting of indivisible elements. The opposition of these two notions seemed to him to arise from an inadequate conception of substance, and the task he set himself was that of deepening the current notion of substance.[24]

Though the difficulties of the composition of the continuum emerge with respect to spatial, temporal, and numerical quantities as well as with respect to extended quantity, it adequately serves our purposes to confine our attention to them as they are involved in the latter.

In critical writings directed against Descartes' Principles, Leibniz defines 'extension' as "simultaneous continuous repetition" ("extensio est repetito continua simultanea").[25] According to Leibniz, continuous repetition is one of two kinds of repetition; the other is discrete repetition:

> Every repetition (or multitude of the same things) is either discrete, (as in numbers where aggregate parts are discerned); or is continuous, where the parts are indeterminate and can be assumed in infinite ways.[26]

He goes on to distinguish continuous simultaneous repetition from continuous successive repetition. Time and motion, he says, are continua whose parts are repeated successively, while space and body are continua whose parts are repeated simultaneously. As an illustration of the

interdeterminacy of a continuum, Latta offers the example of a rainbow:

> There is no limit to the number of varieties of colour that may be discriminated in the rainbow; the usual division into seven colours is an arbitrary arrangement made by observers.[27]

Against both the Cartesians as well as the Gassendists, Leibniz holds that bodily substance,--if there are bodily substances, a doubt which he expresses to Arnauld--must be composed of indivisible, immaterial parts. That is, against the Cartesians, he holds that if there are bodily substances they cannot be continua constituted by simultaneously repeated parts, (that is, extension cannot be the essence of bodily substance). On the contrary, Leibniz argues, if there are bodily substances, the parts out of which they are constituted must be indivisible, that is, they must be parts which do not themselves have parts. Against the Gassendists who, in agreement with Leibniz, hold that if there are bodily substances they cannot be infinitely divisible, Leibniz holds that bodily substances, if there are any, cannot be constituted out of parts which are themselves bodily, that is material.

The difficulties of the labyrinth of the continuum, as thusly defined, led Leibniz to an analysis of the notion of a part of a substance. In his discussions there seems to be constantly before his mind the questions: What are individual substances? What must individual substances be

like if they are to be really individuals and not collections of individuals?

We shall begin our account of the difficulties of the continuum as Leibniz perceived them with an exposition of his argument against the Cartesians. (In our exposition, the concept of a substantial part will remain unanalyzed at first and gradually given content as we proceed.) In the draft of his letter to Arnauld of November, 1686, Leibniz writes that once it is granted that bodies are substances and not phenomena, "it might be inferred, I think, that the corporeal substance consists neither in extension nor in divisibility."[28] He continues:

> Every extended mass may be considered as a composite of two or of a thousand others, and the only extension there is, is that by contact. Consequently, we shall never find a body of which we can say that it is really one substance; it will always be an aggregate of several. Or rather, it will not be a real being, because the component parts are subject to the same difficulty, and we should never reach a real being, for the beings which result from an aggregation have only as much reality as there is in their ingredients. Whence, it follows that the substance of a body, if it has one, must be indivisible; whether we call it soul or form makes no difference to me.[29]

The argument of the present passage is stated somewhat more clearly in the following one:

> Everybody agrees that matter has parts, and is consequently a multiplicity of many substances, as would be a flock of sheep. But since every multiplicity presupposes true unities, it is evident that these unities cannot be matter,

> otherwise they would in turn be multiplicities, and by no means true and pure unities, such as are finally required to make a multiplicity.30

It will be noted that in the present passage Leibniz does not explicitly state that he is arguing against the Cartesian view that extension is the essence of bodily substance. However, in the immediately preceding passage it is quite clear that he is arguing against this view, and since the argument of both passages is the same, we may infer that, in writing the present passage, the Cartesian view was surely in the forefront of his mind.

That every multitude presupposes true unities is a favorite point of Leibniz's, occurring not occasionally, but throughout his writings. As both of the above passages indicate, it is an important premise in his argument against the Cartesians on the issue of the substantiality of extension; indeed, he elsewhere indicates a willingness to rest the entire argument on this point alone. It is necessary, then, to consider a passage in which he develops the point at length:

> I believe that where there are only beings by aggregation, there are not even real beings, because every being by aggregation pre-supposes beings endowed with true unity, because it obtains its reality only from the reality of the elements of which it is composed, so that it will have no reality at all if every being of which it is composed is again a being by aggregation; or else we must seek some other foundation for its reality, seeing that by this method it can never be reached, even by searching forever.31

We have now before us sufficient texts to present Leibniz's argument against the view that bodily substance is essentially extended. Thus: Suppose that the essence of bodily substance is extension. Extension, it will be recalled, is defined by Leibniz as a continuous simultaneous repetition of parts. Now, if matter has parts, says Leibniz, it follows that it is "a multiplicity of several substances, as would be a flock of sheep."[32] His point is that if the essence of bodily substance is extension, then the parts whose repetition constitute that extension must themselves be substances. For, if bodies are substances and essentially extended, then the substantiality of a body (which is an aggregate) must reside in the substantiality of its repeated parts; ("the beings which result from an aggregation have only as much reality as there is in their ingredients").[33] Now, says Leibniz, the substantial parts whose repetition constitues an extension cannot themselves be extended, for if they are, they in turn will be "beings by aggregation" and thus, like that which they constitute, their substantiality will in turn reside in the substantiality of their parts. At some point, he says, we must arrive at "true unities," that is, parts which do not themselves have parts.

To see why this is so, let us suppose the contrary, that is, let us suppose that the substantial parts whose

repetition constitutes the extension with which we began are themselves extended, and that the parts of each such extension are themselves extended, and so on ad infinitum. Let 'A' stand for any one of these substantial parts. Since A is extended, it is a substance only if the parts which constitute it are substances. For if A is both extended and a substance, its substantiality must reside in the substantiality of its parts. But the parts of A are themselves extended and so are substances only if each is constituted by parts which are themselves substances. But these parts in turn are extended and so are substances only if, etc., and so on ad infinitum. Hence, A is not a substance since the condition alone on which it is a substance, namely, that its parts be substances, cannot be fulfilled--and this because since A is an aggregate of parts to infinity, the substantiality of every succeeding part stands under the condition that its parts be substances. It follows from this, according to Leibniz, that if there are beings through aggregation, then there must be "true unities," that is, parts which do not themselves have parts. For if the parts of a being by aggregation are not themselves without parts but are also beings by aggregation, "we must seek some other foundation for its reality seeing that by this method it can never be reached, even by searching forever."[34]

It remains to see why this argument refutes the view that the essence of bodily substance is extension. For a Cartesian might reply to it by saying that, for a given bodily substance, though it is essentially extended, the parts whose repetition constitute it are not themselves extended. Leibniz holds that if something is essentially extended, it follows that the parts constituting it are also extended. Though the inference is not explicitly supported in the argument, it is easily defended on the grounds of the general premise that the substantiality of an aggregate resides in the substantiality of its parts. Thus, suppose that extension is the essence of bodily substance. It follows that if A is a bodily substance, its substantiality resides in the substantiality of the parts whose repetition constitutes it. Hence, that to which the extension of A essentially belongs is its parts, for A has no reality over and above the reality of its parts. Hence, if A is essentially extended, the parts constituting it are extended.

Thus, against the Cartesian view "that the nature of body consists not in weight, nor in hardness, nor color and so on, but in extension alone" Leibniz argues that if there are bodily substances, it cannot be of their essence to be extended. The parts, he argues, whose repetition constitutes an extension cannot themselves be aggregates constituted by a repetition of parts themselves aggregates, and

so on ad infinitum. Rather, if bodies are substances, they are beings through aggregation whose substantiality can be secured only by supposing them constituted by parts which do not themselves have parts. To this extent Leibniz agrees with the Gassendists; however, in opposition to their view, he affirms that these parts without parts cannot be material.

Leibniz offers several arguments against Atomism, but for our purposes it will suffice to record his objections to it so far as it was propounded as a solution to the problem of the composition of the continuum. In agreement with Leibniz, the Gassendists held that material atoms are extended and so have parts. However, the Gassendists argued, though atoms have parts, they are also perfectly hard, that is, their parts cannot be separated from one another. Hence, atoms are indivisible and so satisfy the condition of being the true units of substance required to constitute a being through aggregation. To this Leibniz replies that since 'hardness' is a relative term, the concept of perfect hardness is self-contradictory, just as is the concept of the fastest motion. More importantly, however, he says that even if perfect hardness were possible, it would only guarantee that atoms cannot actually be divided; they remain nevertheless 'mentally divisible' and so their parts, while inseparable, are still really diverse:

> Material atoms are contrary to reason, besides being still further composed of parts, since an invincible attachment of one part to another (if we could reasonably conceive or assume this) would not at all destroy the diversity of these parts.[36]

Thus, even supposing that the parts of an atom cannot be separated from one another, that they are diverse implies that the atom they constitute is an aggregate; and, as is shown in the argument against the Cartesians, the substantiality of a body cannot reside in aggregate parts.

With this analysis of Leibniz's critique of the Cartesians and Gassendists with respect to the problem of the composition of the continuum we may conclude our examination of his treatment of it. Leibniz's own solution to the continuum problem is not relevant to our present critical and expository concerns and, moreover, is of formidable complexity.[37] As we may now see, Leibniz's application of his analysis of unity to this problem readily leads to the interpretative conclusion that for him, the manner in which monads are indivisible is the manner of indivisibility which is opposed to the divisibility of continua. For, his analysis seems to be that while, as over and against the Cartesians, the Gassendists are correct in holding that continua must be composed of indivisible units, the kind of indivisibility which they mistakenly sought for in material atoms can only be found in immaterial units ("formal atoms"), that is, monads. Since the kind of indivisibility the

Gassendists believed material atoms to have is the kind opposed to the divisibility of continua, we might conclude that this is also the kind of indivisibility which Leibniz thought monads to have. We shall see in the next chapter that this interpretation cannot be sustained. There it will be shown that Leibniz's above argument against the Cartesian view that extension is the essence of bodily substance is but a special application of a more general argument he offers for the indivisibility of substance. By detailed analysis of this more general argument, we will see that substantial indivisibility for Leibniz is not the indivisibility opposed to the divisibility of a continuum.

We have seen that Leibniz sought to introduce the scholastic doctrine of substantial forms into post-Cartesian thought for what he identifies as their metaphysical function of serving as "the principles of a true unity." In the next chapter we shall see that the doctrine of substantial forms serves the same function for Leibniz as it did for Aquinas; the function, namely, of making substances to have their being undividedly in the sense we identified in our discussion of Aquinas as 'transcendental undividedness.' Also, in our exposition of Leibniz's argument against the Cartesians on the issue of the substantiality of bodies we have taken an initial step towards unfolding his analysis of unity and have explored the very likely possibility of

misinterpretation which is opened up by his application of this analysis to the continuum problem.

[1]See passage at footnote number 6 of chap. I , p. 25 above.

[2]See passage at footnote number 5, p. 54 below.

[3]Gottfried Leibniz and Antoine Arnauld, The Leibniz-Arnauld Correspondence, trans. and ed. H. T. Mason, with an Introduction by G. H. R. Parkinson (New York: Manchester University Press, 1967), pp. xxxix-xlviii.

[4]Ibid., p. xlviii.

[5]Gottfried Leibniz, Philosophical Papers and Letters. trans. and ed. and with an Introduction by Leroy Loemker, 2 vols. (Chicago: University of Chicago Press, 1956), 2:741.

[6]Ibid.

[7]Gottfried Leibniz, Discourse on Metaphysics, Correspondence with Arnauld and Monadology, 2d ed., trans. George R. Montgomery, rev. trans. Albert R. Chandler with an Introduction by Paul Janet (La Salle, Ill.: Open Court Publishing Co., 1902; reprint ed., Chicago: Paquin Printers, 1962), p. 17.

[8]Toletus, n. ref., quoted in Ibid., p. viii.

[9]Ibid.

[10]William Gilbert, De Magnete, n.p., n.d., quoted in Peter T. Manicas, "Aristotle, Dispositions and Occult Powers," Review of Metaphysics 18 (June 1965) : 686.

[11]Leibniz, Discourse et al., p. 16.

[12]Ibid.

[13]De Wulf, Mediaeval Philosophy, 2:312.

[14]Ibid., 2:313.

[15]Ibid., 2:312.

[16]See passage at footnote number 7, p. 55 above.

[17]See passage at footnote number 6, p. 54 above.

[18]Bertrand Russell, A Critical Exposition of the Philosophy of Leibniz with an Appendix of Leading Passages, 2d ed. (London: George Allen & Unwin, 1937), p. 100.

[19]Gottfried Leibniz, The Monadology and Other Philosophical Writings, trans. and with an Introduction and notes by Robert Latta (Oxford: University Press, 1925), p. 22.

[20]René Descartes, The Philosophical Works of Descartes, trans. Elizabeth Haldane and G. R. T. Ross, 2 vols. (Cambridge: Cambridge University Press, 1931; reprint ed., New York: Dover Publications, 1955), 1:255-256.

[21]Pierre Gassendi, Selected Works of Pierre Gassendi, trans. and ed. Craig B. Brush (New York: Johnson Reprint Corp., 1972), p. 399.

[22]Benedict Spinoza, Philosophy of Benedict De Spinoza, trans. R. H. M. Elwes (New York: Tudor Publishing Co., 1936), p. 36.

[23]Leibniz, Monadology et al., p. 23.

[24]Ibid., pp. 21-22.

[25]Gottfried Leibniz, New Essays Concerning the Human Understanding Together with an Appendix Consisting of Some of His Shorter Pieces, trans. Alfred G. Langley (London: MacMillan Co., 1896), p. 700.

[26]Ibid.

[27]Leibniz, Monadology et al., p. 22n.

[28]Leibniz, Discourse et al., p. 154.

[29]Ibid., pp. 154-155.

[30]Russell, Leibniz, p. 248.

[31]Leibniz, Discourse et al., pp. 189-190.

[32]See passage at footnote number 30, pp. 64-65 above.

[33]See passage at footnote number 29, p. 64 above.

[34]See passage at footnote number 31, p. 65 above.

[35]Descartes, Philosophical Writings, 1:255.

[36]Leibniz, Papers and Letters, 2:745.

[37]Although Leibniz's solution to the continuum problem is irrelevant to the critical and expository concerns of the present chapter, the following remarks may serve to round out the discussion. Briefly then, for Leibniz extension is a phenomena of monads. He writes:

> "Extension, motion, and bodies themselves, insofar as they consist in extension and motion alone, are not substances but true phenomena, like rainbows and parhelia. . . . For the substance of bodies there is required something which lacks extension; otherwise there would be no principle to account for the reality of phenomena or for true unity (Leibniz, Papers and Letters, 1:417).

To see precisely how this "something which lacks extension," that is, monads, "account for the reality of the phenomena" requires a thorough examination of Leibniz's concept of phenomenality. The specific application of such an examination to the continuum problem must include an analysis of Leibniz's statement that color, conatus, and resistance are "merely species of extension" (Leibniz, Papers and Letters, 1:223).

C H A P T E R I V

UNITY AND BEING

In this chapter we will show that Leibniz's treatment of the unity of substance is in keeping with the scholastic tradition which is both represented in Aquinas' treatment of unity as well as established by him with respect to those aspects of that treatment given shape by his original doctrine of the unicity of substantial form. We will accomplish this by means of a detailed expository analysis of Leibniz's general argument for the unity of substance, of which his argument against the Cartesian view that extension is the essence of bodily substance is but a special case. Leibniz gives a very clear presentation of this argument in the course of his correspondence with Arnauld, and it is on this source that we shall primarily rely. Though we will draw heavily from this material, our exposition of it will be supplemented by analyses of texts whose dates of composition span almost the whole of Leibniz's subsequent writing career, and the arguments of these texts will be seen to cohere with the basic doctrines of the cited letters to Arnauld.

Throughout our analysis we will repeatedly touch upon Leibniz's concepts of the unity and being of an aggregate. As will be seen, this manner of unity and being stands in

systematic opposition to the unity and being of substances, and so its consideration is essential to an explication of substantial unity and being. Leibniz's concept of a being by aggregation coincides with his concept of a well-founded phenomenon ('phénomène bien fondé'), and our consideration of it will yield substantive results both with respect to his distinction between phenomenal being and substantial being as also to the general interpretation of his concept of phenomenality.

The material of this chapter is divided into three sections. In the first we will trace the course of Leibniz's discussion with Arnauld over the problem of unity in reference to the substantiality of bodies. This discussion eventually gives way to the general consideration of the nature of the unity in question, and this will be our concern in the second section. In the third and final section we will apply the results of our analysis to the interpretation of some important aspects of Leibniz's treatment of phenomenality.

Unity and Bodies: The Issue in the Foreground

At the prodding of a series of rather concrete questions and objections from Arnauld, Leibniz, in the second half of the correspondence, undertook what is perhaps one of his most sustained articulations of his concern over

the undividedness of being. Our interpretation will draw heavily from these letters.

Leibniz's letter to Arnauld of July 14, 1686, marks a turning point in the correspondence. The discussion of the previous letters concerned Leibniz's thesis that "the individual concept of each person includes (enferme) once for all everything which can ever happen to him."[1] In his letter of July 14, 1686, however, Leibniz introduces two new theses, and their discussion occupies the remainder of the correspondence (roughly, five-eighths). The first of these is the "hypothesis of the concomitance or the agreement of substances among themselves,"[2] and we will not be concerned with it. Our concern is with the second thesis, namely, that:

> If the body is a substance and not a simple phenomenon, like a rainbow, nor a being united by accident or by aggregation, like a pile of stones, its essence cannot consist in extension, and one must necessarily conceive of something there which one calls substantial form and which corresponds in some manner to the soul.[3]

To the modern reader, it may not be apparent that the central concern of this passage is with the kind of unity which bodies must possess if they are substances. Even the careful reader who, noting the opposition between bodies as substances and beings united by accident or by aggregation, asks himself: how are bodies united if, supposing them to be substances, they cannot be united by accident

or by aggregation? may fail to notice this. To Arnauld, however, it was readily apparent that Leibniz was here raising the issue of the kind of unity which bodies must possess once they are supposed to be substances. Indeed, that this is the issue with which Leibniz is engaged in the present passage should be apparent to anyone familiar with the scholastic theses that ens and unum are convertible and that that alone by which a substance is made to be transcendentally one is its substantial form.

It may help to recall the reasoning behind this last thesis. If unity and being are identical in re, then that which makes a substance to be is also that which makes it to have its being undividedly. Were it otherwise, unity would not be a transcendental determination of being. What makes a substance to be is its substantial form, and hence, it is its substantial form which makes it to have its being undividedly. The present passage may be explicated as follows: If we suppose the body to be a substance, its unity cannot be a mere unity by accident or by aggregation. It must, rather, have a 'substantial unity' or an 'unum per se' (Leibniz's terms); that is, it must have its being undividedly. But how are we to secure undivided being for bodies? Since only a principle adequate to make the body to be a substance can be adequate to make it to have its being undividedly, Leibniz saw no alternative than "to conceive of something there which one calls substantial

form";[4] (recall that it was in order to find "the principles of a true unity" that, by his own account, he "restored" the theory of substantial forms.[5]

We noted earlier that it was readily apparent to Arnauld that the central concern of the present passage is over the kind of unity which bodies must possess once they are supposed to be substances. This can be seen from his commentary on the passage. The reader's indulgence for our rather lengthy citations is requested as Arnauld's criticisms, and more importantly of course, Leibniz's replies to them, constitute significant evidence in support of our thesis that Leibniz's understanding of monadic unity is in keeping with that understanding of unity found in the work of Aquinas.

Arnauld offers seven critical comments in response solely to the above-quoted passage from Leibniz's letter of July 14, 1686. Of these, only the first and third are of immediat interest to us. Arnauld writes:

> 1st Our body and our soul are two substances really distinct. Now, if we put into the body a substantial form aside from this extension, we cannot imagine how there should be two distinct substances, we cannot see therefore that this substantial form has any relation to what we call our soul.[6]
>
> 3rd Is it the substantial form of a block of marble which makes it one? If this is so, what becomes of that substantial form when it ceases to become one, after it has been cut in two? Is it annihilated, or does it become two? The first is inconceivable,

> if this substantial form is not a mere manner of being, but is a substance; and it cannot be said that it is a manner of being or a mode, because then the substance, of which this form would be the mode, would be an extension. This apparently is not your thought. And if the substantial form should become two instead of one, why would not the same be said of the extended alone without this substantial form?[7]

We shall discuss Leibniz's response to these two points in some detail. First, let us paraphrase the gist of some of Arnauld's other four points together with a comment about their significance for our purpose. For his fourth point, Arnauld asks Leibniz whether he believes that extension has a general substantial form such as the forma corporeitatis of certain Schoolmen or whether there are as many different substantial forms as there are different bodies, differing in kind as bodies differ in kind. Fifthly, he asks whether the unity which we attribute to the earth, or sun when we say that there is only one earth, etc., is to be accounted for by saying that the earth, etc., has a substantial form. Here Arnauld seems to be confusing transcendental unity with numerical unity, but Leibniz does not raise the point. Finally, as his last point, Arnauld mentions that the Cartesians "in order to find unity in bodies"[8] have held that matter is composed of indivisible atoms, in the hope, perhaps, that Leibniz will find this a less cumbrous solution to his difficulty. If so, however, Arnauld has again failed to appreciate Leibniz's position,

for a body composed of indivisible atoms is not on that account transcendentally one.

Though perhaps at this point in the correspondence, Arnauld did not fully appreciate the difficulty with which Leibniz was engaged in the preceding passage, his comments leave no doubt that he understood Leibniz to be concerned with the indivisibility, or oneness, or unity of bodies. To the modern reader, however, this is not at all evident; indeed, so much is it not in evidence that he is likely to suspect that Arnauld was not responding solely to the preceding passage, relying for his understanding on material Leibniz developed in a letter subsequent to that of July 14, 1686, or in other material in that letter--neither of which could have been the case. Many of the exchanges from this portion of the correspondence are striking in this respect.

We shall now consider Leibniz's replies to Arnauld's criticisms. In a draft of his reply, Leibniz remarks that he is not satisfied with what he has said about substantial forms and that he finds several of Arnauld's questions difficult to answer. However, he does not voice his dissatisfaction in the actual letter sent to Arnauld. As we shall see, some of Leibniz's replies are not satisfactory, and it will be instructive to note which are and which are not.

In response to Arnauld's first criticism, Leibniz answers as follows:

> The first difficulty which you point out, Sir, is that our soul and our body are two substances really distinct; therefore, it seems that the one is not the substantial form of the other. I reply that in my opinion, our body by itself, the soul left aside, or the cadaver, can be called one substance only by a misuse of the term, like a machine or like a pile of stones which are only beings by aggregation; for arrangement, regular or irregular, does not matter to substantial unity.[9]

Here Leibniz relates the concept of a substantial form to the concepts of oneness and being. Considered apart from its soul, or substantial form, the body lacks substantial unity; it is not one substance. Since, as he says elsewhere, "what is not truly one being is not truly one being either,"[10] we cannot say that the soul and the body by itself are distinct, for we do not here have two things between which to distinguish. Leibniz's point is not that since the body by itself is not numerically one thing it cannot be counted as one of two substances (the other being the soul) as Arnauld has evidently done. To this Arnauld could easily have replied that since the soul is distinct from each of the several things collectively called the 'body,' it cannot be the substantial form of the body.

To Arnauld's third objection, Leibniz develops material of considerable interest to us. He writes:

> I think that a block of marble is, perhaps, only the same as a pile of stones and thus cannot be considered a single substance but a collection of many. For let us assume that there are two stones, for instance, the diamond of the Grand Duke and that of the Grand Mogul; one and the same collective name can be given to account for both, and it may be said that they are a pair of diamonds although they are to be found a long way from each other; but it will not be said that these diamonds compose one substance. Matters of degree have no place here. If therefore they are brought closer to one another, even to the point of contact, they will not be more substantially united on that account; and even if after contact one were to add some other body calculated to prevent their separating, for example, if one were to set them in a single ring, all that would make only what is called unum per accidens. For it is as though by accident that they are forced into one and the same movement.11

Like the body by itself, a block of marble is not a single substance; rather, it is a collection of several substances. As the example shows, however, the several substances in a block of marble do make up numerically one thing (namely, one block) and can be collectively called by one name, just as the two diamonds make up numerically one thing, namely, one pair of diamonds, and can be collectively called by one name. Things of this kind Leibniz calls 'beings by aggregation.' However, the one thing which these substances make up is not one substance, for it is one only by accident; that is, it is not one in the way in which a substance is one; rather, it is one in a different way. The following passage, written to DesBosses, makes this point explicitly.

> I feel that a union which makes an animal or any organic body of nature a substantial unity with one dominant monad is far different from a union which makes it a simple aggregate such as a pile of stones. The latter consists in a mere union of presence or of place, the former in union constituting a new substantiation; the Scholastics call it an unum per se, while they call the former an unum per accidents.[12]

The example of the two diamonds in a setting illustrates how several substances can make up one thing by accident. Set in a single ring, the two diamonds are numerically one in respect of their motion. It is on this account that they make up numerically one thing, just as the several stones in a pile make up numerically one pile by reason of their being in one place. However, it is by accident that the diamonds are one in motion; that is, it is accidental to each that its motion is the same as that of the others; ("it is as though by accident that they are forced into one and the same movement").[13] Since it is by accident that the diamonds are one in motion, what they make up on that account is one by accident. Finally, we should note that that by which something is made to be accidentally one is also that by which it is made to have being by aggregation. What has being by aggregation has it in virtue of a property accidentally held in common by all its constituents; (by 'accidentally held in common' we mean that it is accidental to each of the several constituent substances that it holds the property in question in common with all the others). But this is also that in virtue of

which something is accidentally one.[14] This point is consistent with Leibniz's view that to have being by aggregation is the same as to have accidental unity. He writes to DesBosses:

> Being and one are convertible. But as there is being by aggregation, so also is there a unit by aggregation, although this entity and unity is semi-mental.[15]

(The concepts: unum semimentale and unum per accidens are fundamentally equivalent.)

In his next letter to Arnauld (April 30, 1687), Leibniz abstracts from his previous examples and states his account of accidental unity in general terms. Also, we find that relation is the basis of accidental unity. The text is worth having before us.

> Our mind notices or conceives of genuine substances which have various modes, these modes embrace relationships with other substances from which the mind takes the opportunity to link them together in thought and enter into the account one name for all these things together, which makes for convenience in reasoning. But one must not let oneself be deceived and make of them so many substances or truly real beings; that is only for those who stop at appearances, or indeed those who make realities out of all abstractions of the mind, and who conceive of number, time, place, movement, shape, perceptible qualities as so many beings by themselves.[16]

As is well known, Leibniz held that relations are ideal. Our concern is not with his reasons for holding this but, rather, with the function of this doctrine in his account of accidental unity. It is Leibniz's view that, say,

several stones come to be thought of as one thing, namely, a pile, as a result of the relations which they bear to one another. He would argue that it is because the stones bear a certain relation to one another, namely, the relation of being next to one another, that they may be said to be in one place, and so may be said to make up one thing. If a relation is constitutive of a being, then the kind of reality possessed by the relation will be the kind of reality possessed by the being it constitutes. Therefore, to suppose that relations are 'beings by themselves,' that is, to suppose that they have a reality of their own (i.e., an 'intrinsic' or substantial reality) entails that what they constitute is "a substance or truly real being." Since, on the contrary, relations are ideal, what is constituted by them are 'appearances.' (In his later writings, Leibniz expresses the view that beings by aggregation, and so the relations constituting them, are not phenomena merely but, rather, phénomène bien fondé.)[17] The list occurring at the end of the passage ("number, time, place, . . .") is noteworthy as a list of principles constitutive of phenomenal being.

Thus far we have been supposing that the kind of unity possessed by beings by aggregation is numerical unity. This has seemed to be Leibniz's meaning, and we will shortly examine texts in which the point is explicitly made. But what of the kind of unity possessed by sub-

stances? Is that, too, numerical unity? It would seem that it is, for he speaks of a block of marble as being not a single substance but, rather, a collection of many,[18] thus suggesting that an unum per se is distinguishable from an unum per accidens in the respect that things of the first sort are (really) numerically one while things of the second sort are numerically many, though they are thought of as being numerically one. There is another passage which suggests this interpretation. In his letter to Arnauld of April 30, 1687, he writes:

> To be brief, I hold as axiomatic the identical proposition which varies only in emphasis: that what is not truly one being is not truly one being either. It has always been thought that one and being are reciprocal things. Being is one thing, beings another; but the plural presupposes the singular, and where there is not a being, still less will there be many beings.[19]

Leibniz has in mind the scholastic formula: 'ens et unum convertuntur.' His mention of singularity in opposition to plurality might lead us to take his point to be that while what is numerically one has being, what is numerically several does not. On the other hand, we have seen that Leibniz regards number as a principle constitutive of phenomenal reality, not of substantial reality.[20] This latter interpretation is the correct one, though it should be noted that in his early years Leibniz did attempt to provide a metaphysical foundation for the category of number (perhaps falling short of the Platonic-Pythogorean

view that number is of the essence of things). Thus, for example, in his dissertation of 1666 (which, in his letter to Nicolas Remond of July, 1714, he refers to as "a little schoolboyish essay")[21] he writes:

> The Scholastics falsely believed that number arises only from the division of the continuum and cannot be applied to incorporeal beings. For number is a kind of incorporeal figure, as it were, which arises from the unity of any beings whatever; for example, God, an angel, a man, and motion taken together are four. Since number is therefore something of greatest universality, it rightly belongs to metaphysics, if you take metaphysics to be the science of those properties which are common to all classes of beings.[22]

According to Leroy Loemker, Leibniz came to separate mathematics from metaphysics during his stay in Paris (1672-1676), having discovered that numbers are incapable of maximal determination.[23]

The following passages show clearly that Leibniz identified numerical unity with the unity of an aggregate ('unum per aggregationem') and distinguished it from the unity of substance ('unum per se'). In his letter to De Volder of June 20, 1703, he writes:

> If we are to have real beings and substances, I do not see how we can avoid true unities. Of course, the arbitrary unities used in mathematics do not belong here, for they can be applied as well to apparent entities such as all beings by aggregation--a herd, an army--whose unity comes from thought.[24]

To Des Bosses (April, 1709) he writes:

> Properties pertaining to extension are not to be assigned to souls, and their unity and multiplicity are not to be derived from the category of quantity but from the category of substance.[25]

Finally, in the same letter to Des Bosses, he writes:

> A fraction or half of an animal is not one being per se because this can only be understood of the animal's body, which is not one being per se, but an aggregate, and has an arithmetical, but not a metaphysical unity.[26]

It is quite clear that, for Leibniz, the unity of a substance is not numerical unity. Rather, numerical unity is the mode of unity of a being by aggregation.

Let us return to our discussion of the Arnauld correspondence. That Leibniz's replies to Arnauld's first round of criticisms are, on the whole, not successful, is an unavoidable conclusion. For example, his reply to Arnauld's third objection (what becomes of the substantial form of a block of marble after it has been cut into two) is evasive. As might have been expected, Arnauld raises the same point in his next letter, of March 4, 1687, merely changing the example from a block of marble to living things which, according to Leibniz, possess true unity and so are endowed with substantial forms.[27] Most important, however, Leibniz has entirely failed to support his central thesis, namely, that only that which has true unity may be said to be a substance. Arnauld seizes upon this weakness, making it the major point of his next round of criticism. To this, Leibniz responds with a singularly clear statement

of his position, clearer by far, certainly, than any other to be found in the correspondence. Let us consider Arnauld's objection.

> . . . [All you have said] comes down to saying that all bodies whose parts are only mechanically united are not substances but only machines or aggregates of several substances.
>
> I shall begin with this last point, and I shall tell you frankly that in that there is only a quibble over words. For St. Augustine feels no difficulties about recognizing that bodies possess no true unity, because unity should be indivisible and no body is indivisible. Hence, there is no true unity except in spirits, any more than there is a true 'self.' But what conclusion do you draw from that? 'That there is nothing substantial in bodies which have no soul or substantial form.' In order that this conclusion might be valid, one would first have to define 'substance' and 'substantial' in the following terms: I call 'substance' and 'substantial' that which has a true unity. But as this definition has not yet been accepted, and since there is no philosopher who is not as entitled to say: I call substance that which is not modality or manner of being, and who cannot consequently maintain that it is paradoxical to say that there is nothing substantial in a block of marble, since this block of marble is not the manner of being of another substance, and all that one might say is that it is not a single substance but many substances mechanically joined together.[28]

Arnauld's criticism goes to the heart of Leibniz's position; why, he asks, should we suppose that only that which has true unity is a substance? By an analysis of Leibniz's reply to this question we shall explicate his concept of a 'true' or 'metaphysical' unity ('unum per se').

The Monad as Unum Transcendens

With Arnauld's critical remark that Leibniz has merely stipulated that substantiality requires true unity instead of having shown that it does, the discussion of this issue in the correspondence achieves a deeper level than before. The argumentation is no longer directed at the question of the unity of bodily substance; rather, this question becomes subsumed under the more general questions: what is substance? what is unity? how are substantiality and unity related? The argument of Leibniz's reply is one which is familiar to us from our discussion of his argumentation against the Cartesian view that extension is the essence of bodily substance,[29] and in our exposition of it we will be primarily concerned with only one of its premises. Consequently, a brief restatement of his rejection of the Cartesian view will be helpful. To further facilitate the discussion we will present this restatement apart from the argument's specific reference to the continuum problem. Finally, because our exposition is involved and accomplished in distinct stages, this restatement will be followed by an outline of its organization.

As part of his reply to Arnauld's above cited criticism, Leibniz writes that "where there are only beings by aggregation there will not even be real beings."[30] We may understand his thought to be that there cannot be a <u>being</u>

constituted by infinitely many aggregate parts. The concept of such a being is a self-contradictory one since, as he says further on in the same reply, "a being by aggregation obtains its reality from nowhere but that of its constituents."[31] We may understand the contradiction to be that the statement that the aggregate itself has reality stands in contradiction to the statement that its constituent parts do not. These are contradictory since if the aggregate itself has reality, it has it only having obtained it from its constituents. That the constituents have no reality is precisely the condition of an aggregate constituted by infinitely many aggregate parts. This is as follows. In an aggregate constituted by infinitely many aggregate parts, the reality of each part is conditional upon the reality of its immediate constituents. These in turn have their reality conditional upon the reality of their immediate constituents, and so on ad infinitum. Hence, the condition alone upon which any constituent is real, namely, that its immediate constituents be real, is never satisfied. As Leibniz expresses it, there is no foundation ('fondement') for the reality of such a 'being.' Such a foundation is provided by the reality of a being endowed with a true unity, i.e., a being informed by a substantial form. This statement is important for our purposes. By explicating it we will achieve an understanding of the manner of reality possessed by beings endowed with

a true unity and on the basis of this understanding we will give an analysis of the meaning which the phrase 'a true unity' has for Leibniz.

To this, the following objection may be urged. It may be objected that while it is clear that Leibniz holds that it is because a substance is an unum per se that it may be foundational of reality by aggregation, and while explicating this claim may help in understanding what Leibniz means when he speaks of substantial unity, here we are inquiring into substantial reality, asking: what is substantial reality that it is foundational of reality by aggregation? In what way does knowing how Leibniz thought substances to have their reality aid in determining how he thought them to have their unity? The answer to this possible objection is that it must not be supposed, as the objection evidently does, that substantial being is one thing for Leibniz and substantial unity another. We have seen that he maintains the scholastic thesis "ens et unum convertuntur," and it is a consequence of this thesis that the question: what is the mode of being of substances? inquires into the same subject as the question: what is the mode of unity of substances? Therefore, to ask of substantial being: what is substantial being that it is foundational of being by aggregation? is to ask the same question of substantial unity.

What we will be trying to determine then is the meaning which the phrase 'a true unity' had for Leibniz by an explication of how beings possessing a true unity have their reality. This explication will be accomplished by an analysis of his statement that reality of this kind is foundational with respect to reality by aggregation. Our determination of Leibniz's understanding of the phrase 'a true unity' will culminate by showing that the phrase designates the unity which, in the words of Thomas Aquinas, is "interchangeable with being."[33] We will proceed to this in two stages. In the first stage we show that in an ordinary sense of 'undivided' we may discern a common core of meaning between Aquinas' sense of this word as he uses it to refer to the unity of being, and a sense in which it is natural and appropriate to describe substantial being for Leibniz as undivided being. With this common core of meaning we will proceed to a second stage in which we will determine that the fully articulated Thomistic sense of 'undivided' precisely describes substantial being for Leibniz. Having shown that this Thomistic sense of undividedness describes how Leibniz thought substances to have their being, we will have shown how he thought them to have their unity. The justification for identifying these determinations was presented above in the form of a reply to a possible objection on this point.

We turn now to our explication of Leibniz's reply to Arnauld's criticism, cited above, as contained in his letter to Leibniz of March 4, 1687. Leibniz writes:

> If my view that substance requires a true unity were based only on a definition that I might have coined contrary to common usage, 'it would be only a quibble over words,' but apart from the fact that the common run of philosophers have taken this term more or less in the same way, distinguishing between an unum per se and an unum per accidens, substantial form and accidental form, perfect and imperfect compounds, natural and artificial, I consider matters at a much more general level, and abandoning the use of terms, I believe that where there are only beings by aggregation, there will not even be real beings; for every being by aggregation presupposes beings endowed with a true unity, because it obtains its reality from nowhere but that of its constituents, so that it will have no reality at all if each constituent being is again a being by aggregation; or one must yet seek another foundation for its reality, which in this way, if one must constantly go on searching, can never be found.[34]

Several points should be noted at the outset. First, Leibniz's argument in the present passage is fundamentally the same as his argument against the Cartesian view that extension is of the essence of bodily substance. Here, however, the argument is to show that substance requires a true unity. We see in this the link between the problem of the composition of the continuum and the problem of the unity of substance. Second, the phrase "the common run of philosophers" ("les philosophes ordinaires") refers to the Scholastics. Leibniz's point is that he is using the terms

'substance' and 'substantial' more or less in their traditional, that is, scholastic senses and not in unusual senses as Arnauld accuses him of doing. Also, it should be noted that the phrase 'being endowed with a true unity' refers to substances; Leibniz's use of the expression is in rebuttal to Arnauld's remark that his (i.e., Leibniz's) position depends solely on his definition of the word "substance."

Let us begin our exposition by asking the following question: what kind of distinction is Leibniz attempting to draw in the passage by means of the phrases 'being by aggregation' and 'being endowed with a true unity'? The answer is that he is attempting to distinguish between different manners of reality. For the argument is about the kind of reality possessed by a being by aggregation (namely, a reality which is through, or by means of the reality of its constituents) and the kind of reality possessed by beings endowed with a true unity (namely, a reality of their own) and the fact that a reality of the former kind presupposes a reality of the latter kind. The distinction may thus properly be called a metaphysical one since it is drawn with respect to the different ways in which things have their reality. It might be clearer to say that it is a distinction between different modes of being: the mode of being of a being by aggregation and the mode of being of a being endowed with a true unity.

By the word 'metaphysics' we here understand what Aristotle certainly professed to understand by it and what Aquinas did understand by it, namely, the systematic investigation of being qua being.

Having said that the distinction is of a metaphysical kind, let us say what kind it is not. First, it is not a mathematical or numerical distinction. The passage does not provide grounds for interpreting Leibniz's concern to be that a being by aggregation presents a numerical plurality of beings while a being endowed with a true unity does not. To suppose that this is the difference with which Leibniz is concerned is to confuse the unity of substance with numerical unity (or what Aquinas calls "the one which is the principle of number").[35] Second, the distinction is not a materialistic one, nor one pertaining to mechanistic physics. There are no grounds for supposing Leibniz's concern to be that a being by aggregation may be divided or distributed into parts while a being endowed with a true unity may not. To suppose that it is is to confuse the unity of substance with what Aquinas calls the unity or indivision of a continuum.[36] This latter confusion stems from a misunderstanding of the relation between the problem of the composition of the continuum and the problem of the unity of substance. We turn now to what, on the basis of the present passage, may be inferred in the way of an analysis of these concepts.

Leibniz writes in the just-mentioned passage that a being by aggregation "obtains its reality from nowhere but that of its constituents,"[37] that is to say, a being by aggregation has no reality of its own but only that of its constituents. We take this to be a description of the mode of being of being by aggregation. We may say that being by aggregation is conditional, or accidental, or distributed (i.e., divided) among its constituents. By saying that a being by aggregation is conditionally real we mean that it is real only on the condition that its constituents are real. By saying that it is accidentally real we mean that for it, to be is always to have only the reality of things other than itself. The plural in this formulation is important since we want to identify accidental reality and divided reality. Of course, this identification will not hold for accidents of a single subject. Finally, by saying that a being by aggregation has divided reality we mean that its reality is divided or distributed into the reality of others. These several descriptions of the mode of being of a being by aggregation may be condensed into the following single description: a being by aggregation is a being whose reality belongs to things other than itself.[38] The present passage does not contain a description of the mode of being of a being endowed with a true unity and to find out how, as differing from being by aggregation, such beings have their reality, we will turn to his claim that the reality

of beings endowed with a true unity is foundational of the reality of beings by aggregation.

We want to determine how Leibniz thought substances (or alternatively, beings endowed with a true unity) to have their reality in the light of his statement that such reality is foundational of reality by aggregation. This question may be broken up into four parts:

(1) what manner of reality is the reality of a being endowed with a true unity?

(2) what manner of reality is the reality of a being by aggregation?

(3) can the statement that reality by aggregation requires a foundation be successfully interpreted in terms of our answer to question two? and finally,

(4) can the statement that the reality of a being endowed with a true unity is foundational of the reality of a being by aggregation be successfully interpreted in terms of our answers to questions one and two?

Let us begin by describing substantial reality as differing from reality by aggregation as 'unconditionally real' as opposed to 'conditionally real.' While answers to all four of our questions could be given using these terms, they would not be illuminating ones. The greatest failing of this pair of terms, however, is that the term 'unconditional reality' fails to generate a description of substantial unity. We are not here concerned to generate a de-

scription of unity by aggregation. Such a description will be formulated in the next section, where it will be presented as a definition. Since we are not here defining unity by aggregation, our description of being by aggregation must not be understood as having the force of a definition.[39]

Let us proceed then to the term 'being in itself'[40] (or 'intrinsic being') as a description of the mode of being of a being endowed with a true unity, and retain as its correlative our previously stated description of being by aggregation as a being whose reality belongs to things other than itself. This pair of descriptions will provide us with answers to our questions one and two. Thus:

(1) a being endowed with a true unity is a being whose reality is in, or alternatively, through itself;

(2) a being by aggregation is a being whose reality belongs to things other than itself.

(3) The statement that reality by aggregation requires a foundation is successfully interpreted by describing a being by aggregation as a being whose reality belongs to things other than itself. The interpretation is as follows. A being by aggregation is real only if it has constituents endowed with a true unity; it is unreal (i.e., nothing) if all its constituents are beings by aggregation. This latter thought is what we understand to be the meaning of the following passage from the above quoted letter to

Arnauld of April 30, 1687: "where there are only beings by aggregation there will not even be real beings."[41] In terms of our answer to question two above, this may be interpreted as follows. That whose reality belongs to things other than itself is unreal if those things to which its reality belongs are such that their reality in turn belongs to what is other than themselves, and so on to infinity. In other words, since an aggregate has the reality of what is other than itself, if there is reality through aggregation that reality must have a foundation (or alternatively, a basis or a ground) in a reality which is not through aggregation.

(4) The statement that the reality of a being endowed with a true unity is foundational with respect to the reality of a being by aggregation may be successfully interpreted by defining a being endowed with a true unity as a being whose reality is in itself and a being by aggregation as a being whose reality belongs to what is other than itself. The interpretation is as follows. Something has being by aggregation just in case it has being but only the being of things other than itself. Consequently, since what has being by aggregation has only the being of things other than itself, it follows that if some being by aggregation is real, that which has being in itself may serve as the foundation (or alternatively, the basis or the ground) of its reality.

While our four questions can be successfully answered by defining a being endowed with a true unity as a being whose reality is in itself and describing a being by aggregation as a being whose reality belongs to what is other than itself, the greater merit of our definition of a being endowed with a true unity is that it generates a definition of substantial unity. It is to the formulation of this definition that we now turn our attention. This formulation will be accomplished in two stages. In the first stage we will show that there is a common core of meaning between the sense in which Aquinas uses the term 'undivided' in reference to the unity of being and a sense in which it is natural to describe substantial being for Leibniz (i.e., the being of a being endowed with a true unity) as undivided being. In the second stage we will show that the full meaning which the term 'undivided' (and its cognates) has for Aquinas in this connection precisely describes how Leibniz thought substances to have their being.

What has only the being of things other than itself may properly be described as having its being divided or distributed among things other than itself. Here we are using the term 'divided' (and its cognates) in its ordinary sense and not in the technical, or semi-technical sense in which we used it in connection with Aquinas. To say of a subject that it has its being dividedly is here simply to say that it has its being separated into parts. We understand this

thought to be an interpretation of Leibniz's description of being by aggregation in the above quoted passage from the letter to Arnauld of April 30, 1687. There he says that a being by aggregation "obtains its reality from nowhere but that of its constituents."[42] The phrase 'a being whose being is divided among things other than itself' may be taken as a description of a being whose being belongs to things other than itself.

If what has only the being of things other than itself can properly be described as having its being divided among things other than itself we may, with equal propriety, describe being in itself as being which is not divided among things other than itself. More simply, to have being in itself is to have being undividedly, and we may take the phrase 'a being which has its being undividedly' as a definition of a being whose being is in itself. This is precisely Aquinas' description of the unity which is interchangeable with being (i.e., transcendental unity): "One," he says, "means undivided being."[43] To the question: how did Leibniz think substances to have their being? we may answer with the use of the same expression Aquinas uses to define 'unity' in the sense in which unity is said to be convertible with being. We may say, that is, that for Leibniz, to have substantial being is to have being undividedly. Furthermore, since for Leibniz, to have substantial being is to be an unum per se, it follows that,

for him, we may say that to be an unum per se is to have being undividedly.

It is, of course, true that Aquinas offers a sophisticated analysis of the concept of undividedness (or indivisibility) as it applies to substantial being. His use of the term 'dividere' (to divide) is a technical one when he speaks of division "according to formal opposition,"[44] and we cannot, therefore, baldly assert that in Aquinas' sense of 'undivided,' substantial being for Leibniz may be defined as undivided being. On the other hand, from the fact that Aquinas uses this expression in a technical sense, we should not conclude that it had for him none of its ordinary sense. We may conclude that there is a common core of meaning between the Thomistic sense of 'undivided' and the sense in which we saw it to be quite natural to describe substantial being for Leibniz as undivided being.

We have at this point completed the first stage in our endeavor to formulate a definition of substantial unity. We turn now to the second stage in which we will show that the full meaning which the term 'undivided' has for Aquinas when he uses it in reference to the unity of being precisely describes how Leibniz thought substances to have their being.

We have seen that Leibniz distinguishes between substantial being and being by aggregation, or the mode of being of a substance and the mode of being of a being by

aggregation. Observe that these modes of being are exclusive of one another. Since what has substantial being is foundational of being by aggregation, it cannot itself have its being through aggregation. Furthermore, since what has being by aggregation is founded in substantial being, it cannot itself have the being of substance. In other words, what has being in itself, or intrinsic being, cannot also have the being of things other than itself, and, conversely, what has the being of things other than itself cannot also have being in itself. The point can be simply expressed by saying that substantial being and being by aggregation are exclusive of one another. Let us see precisely why this is so.

Substances may be said to be distinct in the sense that they are truly 'other' with respect to each other, more simply, in the sense that they are not identical with each other. On a form-matter theory of substance, such as Aquinas', substances may be said to be distinct in this sense and also in the sense of being numerically different. While on a form-matter theory, these senses produce truth functionally equivalent statements when predicated of substances(i.e., substances A and B are non-identical if and only if they are numerically different), they nevertheless differ in their meaning. Distinctness in the sense of non-identity results from form while distinctness in the sense of numerical difference results from matter. An example

from a problematic to which the theory of transcendentals was originally responsive will serve to separate these different meanings. The Three Persons of the Holy Trinity are distinct from each other in the sense that they are not identical with each other; nevertheless, they are not numerically different from each other. Were they numerically different there would not be one God but, rather, three. For Leibniz, substance is exclusively form, and substances may be said to be distinct only in the sense of being non-identical. Numerosity for him is mere phenomena, more precisely, numerical oneness is the manner of unity appropriate to being by aggregation.

Let us say then that, for Leibniz, to have being by aggregation is to have the being of distinct substances using 'distinct' to refer to non-identity. Unless the constituents of a being by aggregation are distinct from each other, there will not be an aggregate. Substances are distinct inasmuch as the being of distinct substances admits of distinction into what belongs to one substance and what belongs to another. This latter idea may be taken as merely a further articulation of our description of a being by aggregation as a being whose being is divided or distributed among things other than itself.

The mutual exclusivity of substantial being and being by aggregation is demonstrated as follows. If what has being in itself, or intrinsic being also has the being of

distinct substances (i.e., also has being which admits of distinction into what belongs to this substance and what belongs to that substance, etc.), then it has the being of distinct substances intrinsic to it. What has the being of distinct substances intrinsic to it is not self-identical. In answer to the question: what is it? we would have to say: it is a such and such and it is also what is other than a such and such. It is precisely because what has substantial being (or intrinsic being, or being in itself) is self-identical that it cannot also have being by aggregation. More generally, it is precisely its mode of unity that prevents substantial being from also having the being of an aggregate. Similarly, it is the mode of unity of a being by aggregation, namely, numerical oneness, that prevents it from also having the being of a substance. If what has the being of distinct substances (i.e., what has being by aggregation) also has being in itself, then that being is shared by each of those distinct substances. That is to say, to each of several things other than itself belongs being intrinsic to it. Consequently, its constituents are what it intrinsically is; more simply, it is its several constituent substances. If what has the being of distinct substances also has being in itself it thus loses its numerical oneness and becomes numerically several.

Unity is, so to speak, the boundary between substantial being and being by aggregation. It is its self-identity

which prevents what has substantial being from also having being by aggregation and, similarly, it is its numerical oneness which prevents what has being by aggregation from also having substantial being.

We are now in a position to show that the fully articulated Thomistic sense of 'undivided being' exactly describes substantial being for Leibniz. For Aquinas, it will be recalled, substantial form is that which confers determinate actuality on prime matter. For a given substance, the actuality of its prime matter is its esse.[45] We also saw that, for Aquinas, substances have their being divided "according to formal opposition,"[46] and we said that such division is transcendental division. We defined transcendental division as follows: for two substances A and B, A is transcendentally divided from B if and only if the being which would result were A and B identical, possesses a plurality of substantial forms. Finally, we said that, for Aquinas, to say of a substance that it is transcendentally undivided is merely to deny that it is transcendentally divided; in other words, it is to deny that its esse is plural. In accordance with our present terminology of distinctness in the sense of non-identity, Aquinas' idea may be expressed as follows. To say of a substance that it is undivided is just to deny that the condition of its being is the condition of the being of distinct substances, insofar as they are distinct; i.e., insofar as

their being admits of distinction into what belongs to one substance, to another, and so on.

Turning now to Leibniz, we established above that to say of a substance that it is self-identical is just to say that its being does not admit of distinction into being belonging to what is other than itself; that is, it is just to deny that the condition of its being is the condition of the being of distinct substances. Thus, undividedness of being is for Aquinas what self-identity of being is for Leibniz. Since, for Leibniz, the being of a substance is its self-identity, it follows that substantial being for Leibniz is what undividedness of being is for Aquinas.

We said earlier that since, for Leibniz, substantial being is identical with substantial unity, to answer the question: how did Leibniz think substances to have their being? is to answer the question: how did Leibniz think substances to have their unity? We have seen that, for Leibniz, to have substantial being is to have being undividedly, in the Thomistic sense in which to say of a substance that it has its being undividedly is just to deny that the condition of its being is the condition of the being of distinct substances. We may conclude that the unity, or oneness of substance of which Leibniz speaks is what Aquinas referred to as "the unity which is interchangeable with being."[47]

We have now completed the second stage of our endeavor to formulate a definition of substantial unity for Leibniz. To say of a substance that it is a unity is to say that it has its being undividedly in what we have explicated as the Thomistic sense of denying that the condition of its being is the condition of the being of distinct substances. We formulated this definition by an analysis of Leibniz' statement that the reality of a being endowed with a true unity is fundational with respect to the reality of a being by aggregation. Since to be an unum per se is, for Leibniz, to be an ens per se, to define substantial unity is to define substantial being. Consequently, the four questions into which we divided his statement that the reality of a being endowed with a true unity is foundational of the reality of a being by aggregation must be answerable in terms of our current definition of the unity of a being endowed with a true unity (i.e., a substance). Let us then return to our four questions now defining substantial being as undivided being in the sense specified just above and describing being by aggregation as having the being of distinct substances, which we identified above as merely a further articulation of our description of being by aggregation as being which is divided or distributed among things other than itself. Thus:

(1) a being endowed with a true unity is a being whose reality does not admit of distinction into being belonging

to what is other than itself;

(2) a being by aggregation is a being whose reality belongs to its distinct constituent substances;

(3) the statement that reality by aggregation requires a foundation is successfully interpreted by describing a being by aggregation as a being whose reality belongs to its distinct constituent substances. The interpretation is as follows: that whose reality belongs to its distinct constituent substances is unreal if those distinct constituents are themselves such that their reality in turn belongs to distinct substances constituting them. Thus, a being whose reality belongs to its distinct constituent substances must have a foundation in a reality which does not itself in turn belong to distinct substances;

(4) The statement that the reality of a being endowed with a true unity is foundational with respect to the reality of a being by aggregation may be successfully interpreted by defining a being endowed with a true unity as a being whose reality does not admit of distinction into being belonging to what is other than itself, and a being by aggregation as a being whose reality belongs to its distinct constituent substances. The interpretation is as follows: since what has being by aggregation has its being as belonging to its distinct constituent substances, what has being which does not admit of distinction into being belonging to what is

other than itself may serve as the foundation of its reality.

In addition to their expository function, our four questions have a critical function as well. They show that Leibniz's concept of substantial unity is neither a mathematical one nor a materialistic one. Let us try to answer them by turning them into questions about unity and defining substantial unity mathematically as numerical oneness and then materialistically as the indivisibility which is opposed to the divisibility of a continuum. Our questions two and three are concerned, respectively, with a description of being by aggregation and a justification of that description and they, as well as our answers to them just above, can remain the same for our present purpose.

Let us then rephrase questions one and four as follows:
(1a) what is the manner of unity of a being endowed with a true unity;
(4a) can the statement that the unity of such a being is foundational of the reality of a being by aggregation be successfully interpreted in terms of our answer to 1a?
Defining substantial unity as numerical oneness, the answer to 1a is
(1a) the manner of unity of a being endowed with a true unity is numerical oneness.

Let us try to assess the meaning of this definition. It cannot mean that each substance is numerically one thing,

for to say this is to predicate numerical oneness of an already present reality. As we have seen, substantial unity for Leibniz is identical with substantial being and therefore, if the unity of a substance is said to be, for Leibniz, its numerical oneness, his theory requires that there is no already present reality to which this oneness can be predicated. If this definition of substantial unity is to be in accord with this fundamental doctrine of Leibniz it must be understood to mean that substantial being is identical with numerical oneness. That is, what the definition must mean if it is to be Leibnizian is not that substances are numerically one but that numerical oneness is substance. It is difficult to see what such a statement could possibly mean.

Let us now turn to question 4a.

(4a) The answer seems to be no. We have described a being by aggregation as a being whose reality belongs to its distinct constituent substances. With respect to this description, it is difficult to see what it might mean to say that numerical oneness can serve as the foundation, or basis, or ground of the reality of such a being.

Turning to a materialistic definition of substantial unity we should answer 1a as follows:

(1a) The manner of unity of a being endowed with a true unity is the indivisibility which is opposed to the divisibility of a continuum.

What definition 1a must mean if it is to be in accordance with Leibniz's identification of substantial unity and substantial being is that the absence of the property of divisibility into parts is identical with substantial being. This statement seems to be meaningless.

Finally, in answer to question 4a on this definition of substantial unity we should have to answer as follows: (4a) The answer, again, seems to be no. The statement that the absence of divisibility into parts can serve as the foundation of that whose reality belongs to its distinct constituent substances is incomprehensible.

We have now completed the expository analysis which shows that Leibniz's understanding of the unity of the monad is none other than the scholastic understanding of it which is represented in the work of Thomas Aquinas and also established by him with respect to those aspects of his understanding given shape by his original doctrine of the unicity of substantial form.

Unity and Phenomenality

In the previous section we noted that Leibniz's distinction between substantial being and being by aggregation is based on their respective manners of unity. We said that it is the unity of a substance, that is, its self-identity, which prevents it from having its being through aggregation in addition to having its being through itself.

Similarly, we said, it is the unity of a being by aggregation, that is, its numerical oneness, which prevents it from having being through itself in addition to having its being through aggregation. That is to say, these manners of being are exclusive of one another and their mutual exclusivity is implied by their respective manners of unity.[48] This mutual exclusivity is the basis of Leibniz's distinction between substantiality and phenomenality, and the uncovering of this basis is an important result of our investigation into his doctrines of unity. We turn now to other consequences which this investigation has for the interpretation of his concept of phenomenality.

As his determination of the systematically decisive moment of Plato's thought, Gottfried Martin writes:

> If the Idea of beauty is supposed to have a meaning then beautiful things must have reality and being in some fashion. It is therefore no longer possible that the Idea alone should have being. But how is the being of Ideas related to the being of sensible things? . . . This is the question Plato poses in the later dialogues, the question that brings forth metaphysics, and it is the same question that will define metaphysics for all times.[49]

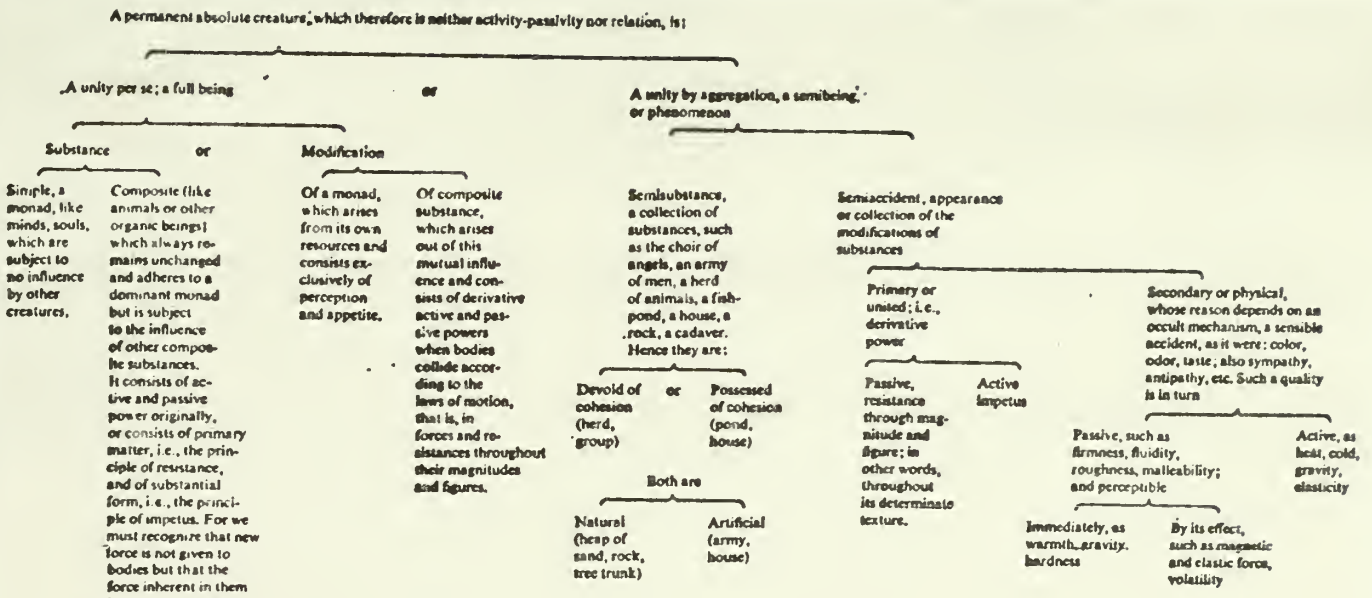
According to Martin, the decisive moment of Plato's thought emerges as the question: what manner of being can be assigned to sensible things? That this is also the question that "brings forth metaphysics" and that will "define metaphysics for all times" is, perhaps, a debatable remark. With respect to Leibniz's metaphysics, however, it is true

that a main effort of his thought was directed towards answering this question.

Like Plato, Leibniz sought to confer some measure of reality on sensible things, and determined their reality through the concept of being by aggregation. He was thus led to what has been called his "twofold plan of being"--the division of what is into what has substantial being (namely, monads) and what has being by aggregation (namely, phénomène bien fondé).[50] In his Theodicy, Leibniz refers to these as "the realm of Grace" and "the realm of Nature."[51] This distinction into monadic being and phenomenal being is, however, only a first division of being; under it are subsumed many subdivisions. In his letter to Des Bosses of August 19, 1715, Leibniz appends a table representing the two-fold plan and it will be useful to have that table before us (see following page).

There is much that can be said about Leibniz's table; indeed, a separate study of it could prove to be an important contribution to Leibniz studies. For our purposes, however, only a few remarks are necessary.

First, we should note that phenomena (i.e., unities, or beings by aggregation) are not imaginary; they are not wholly devoid of reality. Rather, a phenomenon is to be counted as "a permanent absolute creature." On the other hand, that phenomena are not fully real is indicated by the prefix 'semi' in 'semibeing' ('semiens'), 'semisub-


A permanent absolute creature, which therefore is neither activity-passivity nor relation, is:
A unity per se; a full being
or
A unity by aggregation, a semibeing, or phenomenon
Substance
or
Modification
Simple, a monad, like minds, souls, which are subject to no influence by other creatures,
Composite (like animals or other organic beings) which always remains unchanged and adheres to a dominant monad but is subject to the influence of other composite substances. It consists of active and passive power originally, or consists of primary matter, i.e., the principle of resistance, and of substantial form, i.e., the principle of impetus. For we must recognize that new force is not given to bodies but that the force inherent in them is merely determined or modified by others. When one body collides with another, it impels that body by determining the inherent elastic force which arises from internal motion, in a way that can be seen when two equal inflated balls, colliding with equal velocity, are restored to rest through the collision and then resume motion through their inherent elastic force. The same thing happens in every collision, for nature never acts through a leap, nor does any body ever make a sudden transition from rest to motion or from faster to slower motion, or the opposite; it changes by intermediate steps, and this happens through elastic force or the motion of a fluid permeating it.
Of a monad, which arises from its own resources and consists exclusively of perception and appetite.
Of composite substance, which arises out of this mutual influence and consists of derivative active and passive powers when bodies collide according to the laws of motion, that is, in forces and resistances throughout their magnitudes and figures.
Semisubstance, a collection of substances, such as the choir of angels, an army of men, a herd of animals, a fishpond, a house, a rock, a cadaver. Hence they are:
Devoid of cohesion (herd, group)
or
Possessed of cohesion (pond, house)
Both are
Natural (heap of sand, rock, tree trunk)
Artificial (army, house)
Semiaccident, appearance or collection of the modifications of substances
Primary or united; i.e., derivative power
Passive, resistance through magnitude and figure; in other words, throughout its determinate texture.
Active impetus
Secondary or physical, whose reason depends on an occult mechanism, a sensible accident, as it were: color, odor, taste; also sympathy, antipathy, etc. Such a quality is in turn
Passive, such as firmness, fluidity, roughness, malleability; and perceptible
Active, as heat, cold, gravity, elasticity
Immediately, as warmth, gravity, hardness
By its effect, such as magnetic and elastic force, volatility

stance' ('semisubstantia'), and 'semiaccident' ('semi-accidens'). Second, we should note that both semisubstances and semiaccidents are collections of 'full beings' or realities which are unities through themselves. Semisubstances are collections of substances (which substances are unities through themselves) such as "the choir of angels, an army of men, a herd of animals" and so on. Semiaccidents are collections of the modifications of substances, and these latter are also unities through themselves. The table offers no examples of primary semiaccidents, but does list colors, odors, and tastes as secondary semiaccidents and this list is repeated in the text of the latter to which the table is appended.[53]

From these observations on the table, we may draw two conclusions: first, for Leibniz, all phenomena are collections, and second, that which phenomena are collections of, are fully real, that is, are "full beings." This first conclusion presents us with a problem of interpretation: what is meant by the statement that phenomena are collections? We may clarify this statement by asking: how do aggregates come to be? Leibniz writes:

> Our mind notices or conceives of genuine substances which have various modes, these modes embrace relationships with other substances from which the mind takes the opportunity to link them together in thought and enter into account one name for all these things together, which makes for convenience in reasoning. But one must not let oneself

> be deceived and make of them so many substances or truly real beings; that is only for those who stop at appearances, or indeed make realities out of all the abstractions of the mind, and who conceive of number, time, place, movement, shape, perceptible qualities as so many beings by themselves.[54]

Number, time, place, and so on are merely "abstractions of the mind" and to suppose that the reality of, for example, a herd of animals, or an army of men is the reality of substance is, according to Leibniz, to make these abstract concepts "beings by themselves." Why is this so?

Let us recall Leibniz's example of the diamond of the Grand Duke and that of the Grand Mogul. Placed in a single ring, he says, they make up an unum per accidens, for the reason that "it is as though by accident that they are forced into one and the same movement."[55] The movement of the diamond of the Grand Duke is related to the movement of the diamond of the Grand Mogul in such a way that they are one in respect of motion. What the two diamonds make up, namely, one pair of diamonds, is, according to Leibniz, one only by accident; and for the reason that it is by accident that their movement is one. Here Leibniz makes an inference from the character of the oneness in respect of which they are one (i.e., their oneness of movement is accidental) to the character of the oneness of what they constitute (i.e., they are one pair of diamonds by accident). The inference follows because he has identified the oneness of their movement with the oneness of what they constitute, that is, one

pair of diamonds. Recall that movement is one of the "abstractions of the mind" which Leibniz mentions in the passage quoted just above.

In another example, Leibniz says that the union of a pile of stones is "a mere union of place; the Scholastics call it an unum per accidens."[56] The union of the pile of stones is identical with a oneness in respect of place, that is, the oneness of the pile is a oneness of place. Again, note that place is another of the "abstractions of the mind" which Leibniz lists in the above quoted passage.

Generalizing from these examples we can say that, for Leibniz, the oneness of a being by aggregation is a oneness in respect of some abstract concept. Several stones, for example, make up one pile by virtue of being thought through the abstract concept of place as being in one place. Since, as we have seen, Leibniz equates unity with being even in the realm of being by aggregation,[57] it follows that the oneness of that with respect to which several substances are thought to be one is identical with the being of what is constituted by those substances. Also, the unity of an aggregate is, as we have seen, numerical oneness.[58] Thus, we should say that the numerical oneness of the movement of the diamonds is identical with the being of the pair of diamonds; the numerical oneness of the place of several sheep is identical with the being of the flock of sheep, and so on. Our use of the term 'concept' and

the coordinate term 'thought' in this context is not a technical one and the terms should be understood as referring broadly to, respectively, any cognitive item and its manner of exercise. Whether Leibniz would classify motion, for example, as a perception, or as an apperception, or possibly as a mental activity other than these is a question beyond the scope of the present discussion.

We can now see why, for Leibniz, the statement that the reality of, for example, a herd of animals, or an army of men is the reality of substance has the implication that number, place, time, and so on, are "beings by themselves." His point is that the reality of the aggregate is also the reality of that which constitutes the aggregate. Since the aggregate is constituted by thinking its several constituents as one in respect of an abstract concept, it follows that if the reality of the aggregate is substantial so too is the abstract concept in respect of which its constituents are thought.

The reality assigned to the aggregate must be that assigned to what constitutes the aggregate. It follows that since the aggregate is constituted by a manner of thinking its constituents (namely, by thinking them as one in respect of an abstract concept), the reality of the aggregate is the reality of thought. Thus, to De Volder, Leibniz wrote:

> Whatever things are aggregates of many, are not one except for the mind, nor have they any other reality than what is borrowed, or what belongs to the things of which they are compounded.[59]

And again to Des Bosses:

> Aggregates themselves are nothing but phenomena for everything except the component monad is added by perception alone, from the very fact of their being simultaneously perceived.[60]

We have been saying that the reality of the aggregate for Leibniz is the reality of thought. But what is meant by the phrase 'the reality of thought'? In what sense may thought be said to have reality? The following passages from Leibniz's New Essays Concerning Human Understanding serve to clarify the meaning of this statement. He writes:

> This unity of the idea of aggregates is very true; but ultimately you must admit that this collective unity is only a congruity or relation, whose ground is in that which is found in each of the single substances separately.[61]

With respect to what we have said so far, we may interpret Leibniz's statement that "this collective unity is only a congruity or relation" as meaning that he understands the various abstract concepts with respect to which thought thinks the many as one as mannersof relation. If relation is thus constitutive of being by aggregation, then the manner of reality proper to relation, if indeed relations have a manner of reality, will also be the manner of reality of the aggregate. In the following passages, also

from the New Essays, Leibniz speaks of the reality of relations and identifies the source of their reality.

> Relations and orders have something of the being of reason, although they have their foundation in things; for we can say that their reality, like that of the eternal truths and possibilities, comes from the supreme reason.62

Again, he writes:

> Still, although relations are from the understanding, they are not without foundation and reality. For the first understanding is the origin of things; and the reality even of all things, with the exception of simple substances, consists only in the foundation of the perceptions of phenomena of simple substances.63

The reality of relation, for Leibniz, is, ultimately, the reality of the "divine reason" or "first understanding."

In accordance with the problems we set for ourselves in the previous chapter, we have in this chapter shown what Leibniz's reasons were for introducing the scholastic doctrine of substantial forms into post-Cartesian thought. Also, we have explicated his analysis of the unity of being in itself as it is framed in the general argument of which his argument against the Cartesian view that extension is the essence of bodily substance is but a special case. We have seen that his analysis of the unity of being in itself is precisely that analysis of it found in the work of Thomas Aquinas, and that he adopts Aquinas' solution to the problem of accounting for the unity of substance by the doc-

trine of the unicity of substantial form. Finally, drawing on our analysis of unity and being by aggregation we are able to determine what manner of reality Leibniz assigned to sensible things. We have seen that the aggregate is constituted by the thought which, in respect of some abstract category, thinks the many as singly real. We also saw that Leibniz may be understood to have subsumed these various abstract concepts under the category of relation and that the reality of relation, and so the reality of what is constituted by relation, namely, aggregates, is the reality of the divine reason.

In several instances I have revised the standard English translations of the Leibniz-Arnauld correspondence. Wherever I have done so I have given a reference to the original language text as found in C. I. Gerhardt (ed.), Die Philosophischen Schriften von Gottfried Wilhelm Leibniz, 7 vols. (Berlin, 1875-1890) followed by a reference to the Mason translation (cited as Leibniz, Correspondence.) followed by a reference to the Montgomery-Chandler translation (cited as Leibniz, Discourse et al.).

[1]Leibniz, Discourse et al., p. 69.

[2]Ibid., p. 134.

[3]Leibniz, Philosophischen Schriften, 2:58; Leibniz, Correspondence, p. 66; Leibniz, Discourse et al., p. 135.

[4]See passage at footnote number 3, p. 78 above.

[5]See passage at footnote number 6 of Chap. III, p. 54 above.

[6]Leibniz, Discourse et al., pp. 145-146.

[7]Ibid., p. 146.

[8]Ibid., p. 147.

[9]Leibniz, Philosophischen Schriften, 2:75; Leibniz, Correspondence, pp. 92-93; Leibniz, Discourse et al., p. 159.

[10]See passage at footnote number 19, p. 88 below.

[11]Leibniz, Correspondence, pp. 93-94.

[12]Leibniz, Papers and Letters, 2:985.

[13]See passage at footnote number 11, p. 84 above.

[14]Thus, the relation obtaining between, on the one hand, a property held in common by several substances in respect of which they are one and, on the other, being an aggregation (and so also accidental unity) parallels the relation obtaining between substantial form and substantial being (and so also, unity in itself). That Leibniz so related this latter pair has, of course, yet to be shown.

[15]Russell, Leibniz, p. 248.

[16]Leibniz, Philosophischen Schriften, 2:101; Leibniz, Correspondence, p. 126; Leibniz, Discourse et al., p. 197.

[17]See passages at footnote numbers 61 and 62, pp. 123-24 below; also see Leibniz, Papers and Letters, 2:863.

[18]See passage at footnote number 11, p. 84 above.

[19]Leibniz, Philosophischen Schriften, 2:97; Leibniz, Correspondence, p. 121; Leibniz, Discourse et al., p. 191. His letter to Burcher de Volder of June 20, 1703 contains a similar passage. Leibniz writes: "If there were no true one, then every true being would be eliminated" (Leibniz, Papers and Letters, 2:863).

[20]See passage at footnote number 16, p. 86 above.

[21]Leibniz, Papers and Letters, 2:1067.

[22]Ibid., 1:123.

[23]Ibid., 1:554, n. 10.

[24]Ibid., 2:862.

[25]Ibid., 2:973.

[26]Russell, Leibniz, pp. 272-273.

[27]Leibniz, Discourse et al., p. 177.

[28]Leibniz, Philosophischen Schriften, 2:86; Leibniz, Correspondence, pp. 107-108; Leibniz, Discourse et al., pp. 175-176. As Mason points out, Arnauld apparently lost track of the syntax of the last sentence of this passage. The 'as' and 'since' clauses should be taken up by some later clause, most likely to the effect that if Leibniz be entitled to deny substantiality to bodies on the basis of a stipulative definition of 'substantiality', then so too any philosopher who likes should be entitled to attribute substantiality to bodies having sutiably devised an equally stipulative definition; (Leibniz, Correspondence, p. 108, n. 1).

[29]See pp. 66-67.

[30]See passage at footnote number 34, p. 96 below.

[31]Ibid.

[32]Ibid.

[33]See passage at footnote number 6 of chap. II , p. 25 above.

[34]Leibniz, Philosophischen Schriften, 2:96; Leibniz, Correspondence, p. 120; Leibniz, Discourse et al., pp. 189-190.

[35]See passage at footnote number 2 of chap. II , p. 20 above.

[36]See pp. 25-27 above.

[37]See passage at footnote number 34, p. 96 above. In his statement that "a being by aggregation obtains its reality from nowhere but that of its constituents" Leibniz is appealing to two points. The first is that an aggregate of parts, or more generally, a whole, has the reality of its parts. The second is that what has the reality of parts cannot also have a reality of its own. The first point can be defended as follows. If the reality of the parts of a whole is not constitutive of the reality of the whole, then either the whole is not a whole of those parts or it is not a whole at all. The defense of the second point is as follows. Were that which has the reality of parts also to have a reality of its own, then that reality would belong to each of its parts. Since we are here speaking of reality as it is determined by unity (i.e., reality as undivided), it follows that the reality now belonging to one part is indistinguishible from the reality now belonging to another; that is to say, the parts are identical with each other. A whole of parts, however, cannot have only one part. Therefore, a whole of parts cannot have a reality of its own for it would thereby cease to be a whole of parts. In other words, the concept of a whole of parts with a reality of its own is a self-contradictory concept.

[38]Our use of the term 'being of things other than itself' is based on the Thomistic sense of 'ens per accidens', which may be defined as "being which does not have proper (or essential) causality" (Gardeil, Introduction to Aquinas, 4:296). A cause, in the real order, may be defined as "that on which a thing depends for its being or becoming" (Gardeil, Introduction to Aquinas, 4:300). Fully expanded,

the Thomistic definition of 'ens per accidens' becomes "a being whose existence depends on what is other than itself", and this is precisely the category to which we are assigning being by aggregation when we say that for such a being, to be is to have being belonging only to what is other than itself. It is significant that it is the use of Thomistic concepts that enables us to explicate Leibniz's concept of a being by aggregation.

[39]We are seeking to describe the being of an aggregate only insofar as it has real reality, and so far as it does, it has it as belonging to what is other than itself. In addition to its real reality, an aggregate also has the reality of thought, that is, the reality of the thought which thinks the many as singly real. It is a unity of thought (i.e., a numerical oneness of thought) which constitutes the unity of an aggregate.

[40]We are using the term 'being in itself' ('ens per se') in its Thomistic sense, which may be defined as "a being which exists essentially" (Gardeil, Introduction to Aquinas, 4:296).

[41]See passage at footnote number 34, p. 96 above.

[42]Ibid.

[43]Aquinas, Basic Writings, 1:85.

[44]See passage at footnote number 10 of chap. II , p. 29 above.

[45]See p. 35 above.

[46]See passage at footnote number 10 of chap. II, p. 29 above.

[47]See passage at footnote number 4 of chap. II , pp. 22-23 abive.

[48]See pp. 105-109 above.

[49]Gottfried Martin, General Metaphysics: Its Problems and Its Method, trans. Daniel O'Connor (London: George Allen & Unwin, Ltd., 1968), p. 33.

[50]Gottfried Martin, Leibniz's Logic and Metaphysics,

trans. K. J. Northcott and P. G. Lucas (New York: Barnes and Noble, 1964), p. 158.

[51]Gottfried Leibniz, Theodicy, trans. E. M. Huggard (New Haven: Yale University Press, 1952), p. 329.

[52]Leibniz, Papers and Letters, 2:1003.

[53]Ibid., 2:1001.

[54]See passage at footnote number 16, p. 86 above.

[55]See passage at footnote number 11, p. 84 above.

[56]See passage at footnote number 12, p. 85 above.

[57]See passage at footnote number 15, p. 86 above.

[58]See passages at footnote numbers 24, 25, and 26, pp. 89-90 above.

[59]Russell, Leibniz, p. 249.

[60]Ibid.

[61]Leibniz, New Essays, p. 149.

[62]Ibid., p. 235.

[63]My revised translation of: "Cependant quoique les relations soient de l'entendement, elles ne sont pas sans fondement et réalité. Car le premier entendement est l'origine des choses; et même la réalité de toutes choses, excepté les substances simples, ne consiste que dans le fondement des perceptions des phénomènes des substances simples" (Gottfried Leibniz, Nouveaux Essais Sur L'Entendement Humain, (Paris: Garnier-Flammarion, 1966), p. 122. Langley translates this passage as follows: "Nevertheless, although relations are from the understanding, they are not without foundation and reality. For, in the first place, understanding is the origin of things; and even the reality of all things, except simple substances, consists ultimately only in the perceptions of the phenomena of simple substances" (Leibniz, New Essays, p. 148).

CHAPTER V

SOME RECENT INTERPRETATIONS

In this chapter we will consider the interpretations of Leibniz's doctrine of the unity of substance as found in Bertrand Russell's Critical Exposition of the Philosophy of Leibniz and G. H. R. Parkinson's Logic and Reality in Leibniz's Metaphysics. We will show that neither has correctly interpreted this doctrine. According to Russell, substantial unity for Leibniz is numerical oneness. And according to Parkinson, substances are indivisible (i.e., unities) for Leibniz in the sense of 'indivisible' which is the contrary opposite of the sense of 'divisible' in which a continuum may be said to be divisible. We have seen that both of these interpretations of substantial unity for Leibniz are incorrect.

According to Russell, the premises of Leibniz's philosophy are inconsistent. By his own statement, this charge of inconsistency constitutes the distinctively critical character of his book. We will show that this charge is based on his misinterpretation of Leibniz's doctrine of substantial unity and that, therefore, Russell failed to establish it. According to Parkinson, Leibniz cannot be interpreted as trying to deduce the doctrine of the indivisibility of

substances from his logical doctrine that every substance has a complete concept. His endeavor to show this is directed against the assertion made by Russell in his above-mentioned Critical Exposition, and shortly thereafter by Louis Couturat in his La Logique de Leibniz. We will show that Parkinson fails to establish his thesis with respect to Leibniz's doctrine of the indivisibility of substances precisely because he has misinterpreted that doctrine. In showing this it is not our intention to be giving support to the Russell-Couturat thesis, but simply to deny that Parkinson has shown that thesis to be false with respect to Leibniz's doctrine of the unity of substance. For us, Leibniz's statement that every substance has a complete concept is merely the logical side of the ontological statement that every substance has its being undividedly. For it to be shown that he derived one of these statements from the other it would first have to be shown that they are not logically equivalent statements. In what follows, we shall briefly argue that they are.

Let us begin by collecting some of the expressions which Leibniz uses to denote unity as a transcendental property of being. He uses the expression 'truly one' ('vertiablement un') in the sentence: "What is not truly one being is not truly one being either";[1] 'unity' ('unum') in the sentence: "Being and unity are convertible";[2]

'true one' ('vere unum') in the sentence: "If there were no true one every true being would be eliminated';[3] 'a true unity' ('une vertiable unite') in the sentence: "Every being by aggregation presupposes beings endowed with a true unity";[4] 'indivisible' ('indivisible') in the sentence: "Substantial unity calls for a thoroughly indivisible being";[5] 'simple' ('simple') and 'without parts' ('sans parties') in the sentence: "The monad, of which we shall here speak, is nothing else than a simple substance, which enters into composites; simple, that is to say, without parts."[6] All of these passages are well known and may be presumed to be familiar to Russell and Parkinson. Therefore, we will understand an interpretation of what Leibniz means when he says, for example, that substances are indivisible, to apply equally to what he means when he says that substances are simple, without parts, truly one, etc.

Bertrand Russell's Critical Exposition of the Philosophy of Leibniz is, as the title indicates, both an exposition of Leibniz's philosophy as well as a critique of his philosophy as so explicated. While critical comments on Leibniz's philosophy are scattered throughout the book, its distinctively critical character is given to it by a single argument which Russell develops throughout its first half. We will show that this argument of Russell's depends, in a

fundamental way, upon a misinterpretation of Leibniz's doctrine that substances are unities. Russell understands this doctrine to mean that each substance is numerically one, and as we have shown in the previous chapter, this is a mistaken interpretation. With the correction of this interpretative error, Russell's major critical argument collapses.

As was said above, Russell develops the critical argument of his book throughout its first half, and his identifying references as to what this argument is and what its decisive meaning is for Leibniz's philosophy are similarly spread out over this portion of the work. So that there will be no question regarding our identification of this argument or of our understanding of its significance for Russell's critique, we shall begin by tying together the more unambiguous of these references.

In his preface to the second edition, Russell writes:

> [It] is argued in the following pages [that] the subject-predicate logic, taken strictly as Leibniz took it, is incompatible with plurality of substances.7

This remark must be coordinated with the fuller statement of the inconsistency he finds in Leibniz's philosophy as presented in the first chapter. There he writes:

> The principal premises of Leibniz's philosophy appear to me to be five. . . . The premises in question are as follows:

> I. Every proposition has a subject and a predicate. . . .
>
> IV. The Ego is a substance.
>
> V. Perception yields knowledge of an external world, i.e., of existents other than myself and my states.
>
> The fundamental objection to Leibniz's philosophy will be found to be the inconsistency of the first premise with the fourth and fifth; and in this inconsistency we shall find a general objection to Monadism.[8]

The inconsistency which Russell speak of in his preface to the second edition as obtaining between Leibniz's logical doctrines and the assertion that there is a plurality of substances is part of an inconsistency which he speaks of in the present passage as obtaining among the three listed premises of Leibniz's philosophy. From this we may surmise that Russell takes the statement that there is a plurality of substances to be logically equivalent to what is implied by his Roman numeral (V), namely, that there is an external world, that is, as he says, "existents other than myself and my states." It is important for our purpose of showing that Russell's major critical argument against Leibniz collapses that there be no question that he does take these statements to be logically equivalent. We will show that he does on the basis of a reconstruction of his statement of a dilemma which, he says, shows the inconsistency of the three premises of Leibniz's philosophy which he lists in the above quoted passage. This reconstruction will be

made below. For present purposes, it is enough that our assertion be noted that Russell takes as logically equivalent the statements: (A) there is a plurality of substances and, (B) there is an external world.

We mentioned above that Russell shows the purported inconsistency of the three premises of Leibniz's philosophy listed in the above quoted passage by means of a dilemma into which, he says, Leibniz's philosophy falls. One half, or 'horn,' of this dilemma involves his argument to show that by denying that there is a plurality of substances, Leibniz is enabled to provide a paradox free solution to the problem of the composition of the continuum. The second half of the dilemma is the statement: if Leibniz denied that there is a plurality of substances, then, for Leibniz, there is no external world.

Our critique of Russell's dilemma will proceed as follows. First we will establish that Russell does not show that Leibniz's denial of a plurality of substances enables him to provide a paradox free solution to the problem of the composition of the continuum. Russell does not show this, as we shall see, precisely because Leibniz never denied that there is a plurality of substances in the way Russell interprets him to have done so. Now, the other half of Russell's dilemma is: if Leibniz held that there is a plurality of substances, then his solution to the

continuum problem falls into paradox. Since Russell fails to show that, on the contrary assumption, Leibniz did provide a paradox free solution to the continuum problem, he is left saying that Leibniz failed to provide this solution since such a solution is logically impossible. This, however, can hardly be taken as a criticism of Leibniz. We turn then to Russell's argument to show that Leibniz's denial of a plurality of substances enabled him to provide a paradox free solution to the problem of the continuum.

Russell says that Leibniz professed "to deduce the existence and nature of monads largely from the need of explaining the continuum."[9] According to his reconstruction, the purported deduction has as its conclusion:

> If the reality of what appears to be matter is to be saved, this must consist of an infinite plurality of indivisible substances.[10]

According to Russell, this conclusion is problematic inasmuch as "infinite number is self-contradictory, and we cannot be content with the assertion that there is an infinite number of monads."[11] However, says Russell, this problem is not fatal to Leibniz's thought since he was able to evade it. In his account of how Leibniz evaded the conclusion that there is an infinite number of monads, Russell interprets the doctrine of the unity of being to mean that each monad is numerically one. The following passage contains this account.

> To evade the argument, Leibniz makes a very bold use of his principle that, in concretes, the part is prior to the whole, and that nothing is absolutely real but indivisible substances and their various states. Being and unity, he says, are convertible terms. Aggregates, not having unity, are nothing but phenomena, for except the component monad, the rest (the unity of the aggregate, I suppose) is added by perception alone, by the very fact of their being perceived at one time. This remark is of the utmost importance. It is a legitimate outcome of Leibniz's general position, and is perhaps the best alternative which that position allowed him. At the same time, its implications, as will soon be evident, completely destroy the possibility of a plurality of substances. Leibniz's position is this: that the notion of a whole can only be applied to what is substantially indivisible. Whatever is real about an aggregate is only the reality of its constituents taken one at a time; the unity of a collection is what Leibniz calls semi-mental, and therefore the collection is phenomenal although its constituents are all real. One is the only number that is applicable to what is real, since any other number implies parts, and aggregates, like relations, are not 'real beings.' This explains how infinite number can be denied, while the actual infinite is admitted. . . . One whole must be one substance, and to what is not one whole, number cannot properly be applied.[12]

Early in the passage Russell refers to Leibniz's statement that being and unity are convertible terms. The subsequent account of how Leibniz sought to affirm the actual infinite while denying infinite number shows that he understands this statement to mean that the unity of being is numerical oneness. This is as follows.

According to Russell, Leibniz sought to show that the number one is the only number which is applicable to the

real. By showing this, says Russell, Leibniz may admit the actual infinite while denying infinite number. Russell writes that "one is the only number that is applicable to what is real, since any other number implies parts, and aggregates, like relations, are not "real beings."[13] His point is that to say of a reality that it is two implies that it has parts, and so is an aggregate. This is so since to predicate twoness of a reality implies that the reality has constituent substantial parts; for each of the numerical ones contained in the predication of the twoness must apply to a substantial being. Consequently, only the number one can be predicated of what is real. Russell's thought seems to be that in this way Leibniz can affirm the actual infinite while denying infinite number since to enumerate is to predicate twoness, threeness, etc., of reality.

By this argument, according to Russell, the possibility of a plurality of substances is completely destroyed. On the basis of our investigations into Leibniz's analysis of substantial unity which show that, for him, the unity of a substance is the undividedness of its being, we may remark as follows: assuming with Russell that Leibniz did hold that there is a plurality of substances, he certainly was not led into inconsistency for the reason that he also held that the number one is the only number applicable to being in itself. Indeed, as we have also seen, for Leibniz, nu-

merical oneness is the distinctive mark of the phenomenal.

We have yet to reach the major critical statement of Russell's book, though the critique he has developed at this point in his exposition, namely, that Leibniz was forced either to deny that there is a plurality of substances or to admit that there are an infinite number of them, is an important part of that statement. Let us continue then with Russell's exposition.

Russell acknowledges that while the statement that one is the only number applicable to what is real is "a legitimate deduction from the theory that all propositions are to be reduced to the subject predicate form," the statement that there is a plurality of substances "is not of this form--it does not assign predicates to a substance." "Accordingly," he continues, "Leibniz takes refuge, like many later philosophers, in the mind."[14] He explains his meaning in the following passage:

> Thus the truth in the judgment of plurality is reduced to a judgment as to the state of every monad which perceives the plurality.[15]

Stating that he will forego criticism of this determination until a later time, he proceeds as follows:

> For the present, it is enough to place a dilemma before Leibniz. If the plurality lies only in the percipient, there cannot be many percipients, and thus the whole doctrine of monads collapses. If the plurality lies not only in the percipient, then there is a proposition not reducible to the subject-

> predicate form, the basis for the use of substance has fallen through, and the assertion of infinite aggregates, with all its contradictions, becomes quite inevitable for Leibniz. The boasted solution of the difficulties of the continuum is thus resolved into smoke, and we are left with all the problems of matter unanswered.[16]

Russell identifies this dilemma as being a direct result of the allegedly inconsistent triad of statements which he presents in his first chapter as among the principle premises of Leibniz's philosophy. He writes:

> The dilemma in which Leibniz is placed, is a direct result of the combination of three premises, which, as I asserted in Ch. I. (p. 4), are hopelessly inconsistent. These three premises are (1) that all propositions have a subject and a predicate, (2) that perception gives knowledge of a world not myself or my predicates, (3) that the Ego is an ultimate logical subject.[17]

We turn now to the question of whether Leibniz's philosophy does in fact fall into this dilemma.

Let us begin with the half which draws consequences from the assumption that plurality for Leibniz lies not only in the percipient. From this Russell draws three consequences, one of which is that Leibniz failed to provide a paradox free solution to the problem of the composition of the continuum. As we have just seen, Russell has not shown that Leibniz did provide a paradox free solution to the continuum problem by denying the contrary assumption. Russell has not shown this because he interprets Leibniz's denial of a plurality of substances to mean that Leibniz

held that the number one is the only number which is applicable to reality. But it is false that Leibniz held this, and so Russell has not shown that Leibniz provided a paradox free solution to the continuum problem since this is the only argument by which he tries to show this. Consequently, for all Russell has shown, it might nevertheless be true that Leibniz denied that there is a plurality of substances in some other way, i.e., other than by holding that the number one is the only number applicable to reality, and still did not provide a paradox free solution to the continuum problem. But if this is admitted as true, then, together with Russell's statement that if Leibniz affirmed the plurality of substances he did not provide a paradox free solution to the continuum problem, it follows that it is a logical truth that Leibniz failed to solve the continuum problem. This can be so only if it is logically impossible to solve it. Leibniz can hardly be criticized for having failed to solve what cannot logically be solved; however, Russell cannot show that this is not what he is presenting as a criticism of Leibniz.

Let us turn now to the remaining half of Russell's dilemma, namely, that if Leibniz denied that there is a plurality of substances, then he denied that there are many substances.

We noted earlier that in his preface to the second edition, Russell speaks of an inconsistency obtaining

between Leibniz's logical doctrines and the assertion that there is a plurality of substances. This inconsistency, we said, is part of the inconsistency which he alleges to obtain among three premises of Leibniz's philosophy. These three premises are listed in the above quoted passage and in a similar passage we quoted earlier. Since the statement that there is a plurality of substances does not occur on this list but, rather, the statement that there is an external world, we surmised that Russell took these statements to be logically equivalent. This interpretation of Russell's meaning can be established as follows.

If Russell is not taking these statements to be equivalent, one cannot understand how the first premise of his dilemma, namely, "if the plurality lies only in the percipient, then there cannot be many percipients"[18] can function as part of an argument to show that the three principal premises are inconsistent. Thus, we understand the dilemma to show the inconsistency of the triad as follows:

(a) If the plurality lies only in the percipient, then it is false that perception gives knowledge of a world not myself or my predicates (i.e., [2] is false).

(b) If the plurality lies not only in the percipient, then it is false that all propositions have a

subject and a predicate (i.e., [1] is false).

(c) If it is false that all propositions have a subject and a predicate, then it is false that the Ego is the ultimate logical subject (i.e., not [1] implies not [3]). (Thus, Russell says, "then there is a proposition not reducible to subject-predicate form, the basis of the use of substance has fallen through."[19] His point is that the statement that the Ego is the logical subject is based upon the statement that all propositions can be reduced to subject-predicate form.)

(d) If the plurality lies not only in the percipient, then it is false that the Ego is the logical subject, (from [b] and [c] above).

From (a) - (d) it can be easily shown that at least one member of the triad is false.

For Russell, then, the following statements are logically equivalent:

(A) If the plurality lies only in the percipient, then there cannot be many percipients; and

(B) If the plurality lies only in the percipient, then it is false that there is an external world.

Of course, (A) is trivially true, but it is (B) that Russell must establish in order to show that three of Leibniz's premises form an inconsistent triad. In what fol-

ows, we will provide a Leibnizian defense of the denial of (B); that is, we will show that Leibniz can maintain that plurality lies only in the percipient and also that there is an external world. The argument we will develop emerges out of our exposition of Leibniz's analysis of the unity of substance.

Before we proceed, a preliminary remark is in order. Russell does not provide a clarification of what he means by the phrase "an external world," and so must be supposing that the ordinary sense commonly attached to these words is sufficiently clear for the purpose of making his argument. In this connection, it should be recalled that the expression was originally formulated by early analytic philosophers for its common sense value in their arguments against the British neo-Hegelians (cf. the title, "Proof of an External World," by the common sense philosopher G. E. Moore, and, of course, Russell's own Our Knowledge of the External World). Therefore, for the purpose of argument against Russell's statement that, for Leibniz, if plurality lies only in the percipient, then there is no external world, the phrase "an external world" can be used with its ordinary meaning.

Let us begin by asking the following question: why does Russell suppose that the assertion that there are many percipients is the logical equivalent of the state-

ment that there is an external world, or, as he says, "existents other than myself"?[20] These are equivalent only on the assumption that what is other than myself is distinguished as such, i.e., as other, in virtue of our numerical distinctness with respect to each other. In general, the above two statements are equivalent only on the assumption that number is the principle of the diversification of the real. For Leibniz, however, as we have seen, numerical oneness is the distinctive mark of the phenomenal, and number in general is an abstract concept with respect to which thought thinks diverse substances as singly real. What then, for Leibniz, is the principle of diversity with respect to the substantial? We have answered this question in the context of our description of being by aggregation. For Leibniz, we said, to have being by aggregation is to have the being of distinct substances, using 'distinct' to refer to non-identity. Since we have explicated this idea in Leibniz by analysis of key passages from the writings of Thomas Aquinas, it may be helpful to again cite what, for present purposes, is the most relevant of these passages. Thus:

> Now the division which is implied in the notion of the kind of unity which is interchangeable with being is not the division of continuous quantity, which is understood prior to that kind of unity which is the basis of number, but is the division which is caused by contradiction, inasmuch as two particular beings are said to be divided by reason of the fact that this being is not that being.[21]

For Aquinas, the substantial is numerically diverse, but numerical diversity is not the principle which gives rise to the diversity among substances. That principle, rather, is the principle of non-contradiction. That is to say, what makes substances to be diverse, for Aquinas, is their necessary non-identity. As differing from Aquinas, Leibniz maintained that substance is exclusively form. Thus, for him, substances are distinct only in the sense of being non-identical. The diversity of the substantial is not for him a numerical diversity, nor are substances even diverse in the manner of numerical distinctness in addition to being diverse in the manner of being non-identical. Numerical oneness for Leibniz is, as we have seen, the manner of unity appropriate to phenomena. We may add that it is also for him the principle of the diversity with respect to the phenomenal.

Since, for Leibniz, substances are distinct only in the sense of being non-identical, it is possible for him to maintain that plurality lies only in the percipient and also that there is an external world. Hence, the statement: if Leibniz maintained that plurality lies only in the percipient, then he could not also have maintained that there is an external world, which is one half of Russell's dilemma, is false. Since one half of the dilemma is false, the dilemma collapses and consequently Rus-

sell has not by this argument shown that Leibniz's premises are inconsistent. As he offers no other argument in support of the charge of inconsistency, we can conclude that the charge is not established by his work.

The remaining half of Russell's dilemma is the statement that if Leibniz affirmed the plurality of substances, then he did not provide a paradox free solution to the continuum problem. With respect to this statement we had the following to say. We supposed for the sake of the dilemma that at some point in his career Leibniz affirmed the plurality of substances. We saw that Russell fails to show that Leibniz ever did provide a paradox free solution to that problem on the basis of the contrary assumption, that is, on the basis of the assumption that there is no plurality of substances. Russell fails to show this, we said, because he interprets Leibniz's denial of a plurality of substances to mean that he held that the number one is the only number applicable to reality and, we said, Leibniz never held this. From this we concluded that Russell cannot show that he is not merely asserting that Leibniz failed to provide a paradox free solution to the continuum problem because it is logically impossible to do so. And this, we said, can hardly be offered as a criticism of Leibniz.

We turn now to G. H. R. Parkinson's interpretation of Leibniz's doctrine of substantial unity as that interpretation is presented in his Logic and Reality in Leibniz's Metaphysics.

Parkinson presents his interpretation of Leibniz's doctrine of the unity of substance in the form of a commentary on paragraph IX of the Discourse on Metaphysics. There Leibniz lists several statements which he alleges to follow from the two statements: (1) that every substance has a complete concept; and (2) that every substance expresses the whole universe. One of the statements which he alleges to follow from these is that "a substance cannot be divided into two nor can one be made out of two."[22] His point is that one substance cannot be divided into two substances nor can one substance be made out of two substances.

According to Leibniz, the statement (1) above that every substance has a complete concept is a consequence of his intentional theory of the proposition.[23] This theory states that all propositions are of the subject-predicate form[24] and that in every true affirmative proposition, the concept of the predicate, or some component part of it, is contained in the concept of the subject ('contained in' in the sense of having all component concepts in common); while in every true negative categorical proposition, the

concept of the predicate, of some component part of it, is excluded from the concept of the subject ('excluded from' in the sense of having no component concepts in common).[25] Completeness for concepts may be defined as follows: the concept of a substance is complete if and only if (1) it analytically contains the totality of what may be truly predicated of the substance in question and, (2) it analytically excludes whatever is not contained in it in the sense that the addition of what is not already contained in it would render the concept inconsistent. It follows from this that complete concepts are distinct from one another in the sense of being necessarily non-identical. The manner of distinctness which obtains among complete concepts is thus precisely the manner of distinctness which obtains between substances. With respect to complete concepts, this manner of distinctness emerges from their completeness; with respect to substances it emerges from the undividedness of their being. That is, a concept is complete in the sense that it cannot be both a concept of this substance and also a concept of that substance. Similarly, a substance has its being undivedly in the sense that its being does not belong both to it as well as to what is other than it. Thus, completeness of concept and undividedness of being for Leibniz are different sides of one and the same coin.

With regard to Leibniz's statement in the above identified passage of the Discourse on Metaphysics that the indivisibility of a substance follows from the completeness of its concept, Parkinson writes:

> Leibniz does not make clear how he thinks the indivisibility of a substance follows from the completeness of its concept. He might be arguing from the premise that the concept of a substance is indivisible, in the sense that to remove from it one or more of its component concepts would make it incomplete and so the concept of an abstraction, not that of a substance. Given Leibniz's views about the concept of a substance, the premise is sound; on the other hand, no inference can be made from the indivisibility of a concept to the indivisibility of the substance of which it is a concept. For example, it is part of the complete concept of Lord Nelson that he lost an arm in battle; now the complete concept of Lord Nelson may be complete in the sense just explained but it does not follow from this that Nelson did not lose an arm.26

Parkinson goes on to suggest what premises must be added for the conclusion to follow validly; however, before we turn to his suggestion, it will be instructive to consider what he has said thus far. That the indivisibility of Lord Nelson's concept is compatible with his loss of an arm will not serve to show that the indivisibility of his concept is compatible with his division into two substances unless we take the severance of Lord Nelson's arm from his shoulder as an example of what Leibniz means by the division of one substance into two substances. Evidently then, it is Parkinson's intention that we suppose that by

the severing of Lord Nelson's arm from his shoulder, one substance, Lord Nelson, has been divided into two substances, presumably, Lord Nelson and Lord Nelson's arm. Now, does Parkinson's example illustrate what Leibniz means when he speaks of the division of one substance into two substances? On the basis of our researches in the previous chapter, the answer is that it does not.

Before we review the material supporting this criticism, we should see that we are able to undermine Parkinson's interpretation without appealing to our own. Whatever else Leibniz might have meant by saying that no substance can be divided into two substances, at least part of what he meant was that it cannot both be true that something is a substance and also true that it is logically possible for that thing to be divided. Now, the substance which is Lord Nelson-with-arm is Lord Nelson, and thus, unless we are to suppose (what is plainly false) that Lord Nelson is destroyed by the severance of his arm from his shoulder, we must suppose that the substance which is Lord Nelson-without-arm is also Lord Nelson. It follows from this that, at one time, there existed a substance, namely, Lord Nelson (without arm) identical with a substance which, at a previous time, had actually been divided, namely, Lord Nelson (with arm). And this, in turn, implies that it can both be true that something is a sub-

stance and also true that it is logically possible for that thing to be divided. Hence, Parkinson's example of the severance of Lord Nelson's arm from his shoulder does not illustrate what Leibniz means by the division of one substance into two substances.

Let us now turn to Parkinson's suggestion about what premises must be added to the proposition that every substance has a complete concept in order for the conclusion that every substance is indivisible to follow validly. He writes:

> It may be true, however, that Leibniz's argument is different, and that it rests not only upon the assumption that a concept of a substance is complete but also on the assumption that every substance is connected with all other substances, so that it expresses the whole universe. The argument would then be that if it were divided, a substance would not express the whole universe, which it must do.[27]

However, as Parkinson is quick to point out:

> This argument assumes that a substance is economically constructed; that is, that there is no more in the substance than is necessary to express the whole universe. This can only be justified by an appeal to the principle of the best, which is a non-logical principle. Leibniz might reply that a substance could not contain more than it does; it has to express an infinite universe, and so must be of infinite complexity. This, however, does not get rid of the need for the principle of the best, since it is from this principle that Leibniz derives the view that there must be an infinity of substances.[28]

Since the presuppositions of the argument are irrelevant to the critical point we will develop, it suffices that we consider it in the enthymematic form in which it is present in the passage before us.

Let us begin by noting that for Leibniz, the complete concept of an individual substance must be a possible concept, that is, such a concept may not contain incompatible component concepts.[29] Keeping this in mind, let us return to Parkinson's Lord Nelson example. Suppose then that it is part of the complete concept of Lord Nelson that he lost an arm in a certain battle. Since Lord Nelson's concept must be a possible one, it cannot also be part of his concept that he had both arms after the battle. But if this is true, then it cannot also be true that Lord Nelson is indivisible in the sense in which Parkinson is using 'indivisible.' For in whatever that sense is, it evidently follows from saying that Lord Nelson is indivisible in that sense that his arm was never severed from his shoulder. From which it follows that Lord Nelson had both arms after the battle. But, as we have seen, to say that Lord Nelson's concept is complete is just to say that whatever may be truly predicated of him is part of his concept. It must therefore be part of Lord Nelson's concept that he had both arms after the battle, and this contradicts our assumption that his concept is a possible one. If Lord Nelson is in-

divisible in Parkinson's sense, then it cannot be true that both his concept is complete and also that his concept is possible; which is just to say that if his concept is both complete and possible, then he is not indivisible in Parkinson's sense. Thus, given the sense in which Parkinson supposes Leibniz to be using 'indivisible,' it is impossible to construct a valid Leibnizian argument for the conclusion that every substance is indivisible which includes among its premises the proposition that every substance has a complete concept.

We have seen that Parkinson intends his example of the severance of Lord Nelson's arm from his shoulder to illustrate what Leibniz means when he speaks of the division of one substance into two substances. The sense of 'divisible' in which Lord Nelson's arm may be said to be divisible from his shoulder is none other than the sense in which a continuum may be said to be divisible. Evidently then, it is Parkinson's view that, for Leibniz, the indivisibility of a substance is the indivisibility opposed to the divisibility of a continuum. That this is his view is also evident from his discussion of the problem of the composition of continuum. He writes:

> The problem of the labyrinth of the continuum [is this]. We are aware of what is continuous, such as extension and duration; further, anything continuous is infinitely divisible, in the sense that, however small a segment of

> time or space we take, we can always conceive of one smaller. But we also know, Leibniz claims, that any substance must be indivisible; if, then, any substance is really continuous it must be both indivisible and infinitely divisible.[30]

Parkinson could not have believed himself to have described a problem unless he believed that the proposition that such and such a substance is indivisible is incompatible with the proposition that it is infinitely divisible in the sense that no matter how small a part we conceive, a smaller part is always conceivable. If we suppose that for him, to say of a substance that it is indivisible is the same as to say that it is a least conceivable part, then, in fact, these proposition are incompatible. However, it is difficult to see how it might be said that Lord Nelson is indivisible in this sense since no matter what part of him we take, we can always conceive of a smaller one. At best, Parkinson can say that though infinitely divisible in the sense defined, Lord Nelson cannot actually be divided beyond what is accounted for in his complete concept; that is, while it is part of his complete concept that he lost his right arm in battle, it is not part of his concept that he also lost his left arm, and so his left arm cannot be severed from his shoulder. But if this is Parkinson's meaning, then obviously, the proposition that such and such a substance is indivisible is not incompatible

with the proposition that it is infinitely divisible.

Perhaps our difficulties stem from trying to infer Parkinson's sense of 'indivisible' from the definition he gives of 'infinitely divisible.' We might suppose that the note of conceivability is introduced in order to explain how a continuum may be said to be infinitely divisible. Conceptually, we may say, the continuum is infinitely divisible but actually, it would seem, it is only finitely so. Perhaps, then, Parkinson should have said that a continuum is divisible just in case it is actually distributable into parts smaller than it. Continua not actually distributable into smaller parts are conceptually distributable into smaller parts. While all continua are infinitely divisible, only some are actually divisible. We might say, then, that a continuum is divisible just in case either it is actually distributable into smaller parts or conceptually distributable into smaller parts. With this, it appears open to Parkinson to say that a substance is indivisible just in case either it is not actually distributable into smaller parts beyond a certain point (e.g., beyond loss of his right arm, Lord Nelson is not distributable into smaller parts) or not conceptually distributable into smaller parts. (These are incompatible as sub-contraries, supposing it always true that a continuum is conceptually distributable into smaller parts.) But this will not do

either. For what is to be shown is that substances cannot be continuous since what is continuous is divisible while substances are indivisible. But, we have allowed that something may be continuous without being actually distributable into parts; that is, we have said that the continuous is actually distributable into parts only up to a point. We cannot say this and also say that substances are not continuous because they are indivisible in the sense that beyond a certain point they are not actually distributable into parts.

Perhaps we should understand Parkinson differently. We have supposed his view to be that substances are indivisible in the sense that they cannot be actually distributed into parts beyond a certain point. So, for example, we said that beyond the loss of his right arm, Lord Nelson is not actually distributable into parts. Otherwise, he seems to be saying, Lord Nelson would not be able to express the whole universe. In fact, however, this is not Parkinson's view at all. For if it were his view that Lord Nelson is indivisible in the sense that he cannot be distributed into parts beyond a certain point (viz., beyond severance of his arm from his shoulder), he would not have used the severance of Lord Nelson's arm from his shoulder as a counter-instance to Leibniz's claim that the indivisibility of a substance follows from the completeness of its

concept. For his argument is that though it is part of Lord Nelson's complete concept that he lost an arm in battle, and though there is a sense in which his complete concept may be said to be indivisible, it does not follow that Lord Nelson did not lose an arm. Obviously, it is Parkinson's view that because Lord Nelson lost an arm he is not indivisible. As we have understood him, however, what he should have said was not: "it does not follow from this that Nelson did not lose an arm," but rather: "it does not follow from this that Nelson lost nothing beyond his arm," and proceed to say what it was that Nelson lost because of which he cannot be said to have been indivisible.

It is Parkinson's view that Lord Nelson cannot be distributed into parts whatsoever; not that he cannot be distributed into parts beyond what is accounted for in his complete concept. But this implies that it is impossible for Lord Nelson to have lost his arm, which is plainly false, since, in fact, he did. Nevertheless, it seems quite clear that it is Parkinson's view that substances are indivisible in the sense of being incapable of actual distribution into any parts whatsoever. Does this definition of 'indivisible' then help us to understand why Parkinson thinks no substance can be continuous? Again, clearly not. For as we have understood him, something may be continuous without being actually distributable into parts. Hence,

to say that substances are indivisible in the sense of being incapable of actual distribution into any parts whatsoever is compatible with saying that they are continuous.

Thus far we have been unable to fit together an intelligible view from the pieces with which Parkinson has provided us. However, there is a way in which this material may be pieced together which captures what Parkinson may have had in mind and is also intelligible.

According to Russell:

> Everyone who has ever heard of Leibniz knows that he believed in the actual infinite. Few quotations from him are more familiar than the following: 'I am so much in favor of the actual infinite, that, instead of admitting that nature abhors it, as is commonly said, I hold that nature affects it everywhere, in order to better mark the perfections of its author. So I believe that there is no part of matter which is not, I do not say divisible, but actually divided; and consequently the least particle of matter must be regarded as a world full of an infinity of different creatures.'[31]

Now, perhaps it is Parkinson's understanding that, for Leibniz, not only matter but anything continuous is actually infinitely divided. That he does so understand Leibniz is suggested by the fact that he offers extension as an example of something continuous.[32] Supposing, as we may, that he studied the present well known passage, he may have concluded that since what is extended, namely, matter, is actually infinitely divided, it follows that what is continuous is actually infinitely divided. (There is, of course,

no incompatibility between saying that the continuous is divisible in the sense of being actually infinitely distributable into parts, and saying that it is divisible in the sense that no matter how small a part we take, a smaller one is always conceivable.) Supposing this to be Parkinson's understanding of the sense in which a continuum is divisible, we can say that, according to him, substances are not continuous because they are indivisible in the sense of being incapable of actual infinite distribution into parts; that is, beyond a certain point, substances are incapable of actual distribution into parts.

This sense of 'indivisible' opens up for Parkinson an account of what it means to say that Lord Nelson is indivisible which is both intelligible and incompatible with saying that he is continuous. For it can now be said that though Lord Nelson may be actually distributed into parts, he may not be actually distributed into parts beyond a certain point, that is, beyond what is accounted for in his complete concept. Thus, while it is part of Lord Nelson's complete concept that he lost his right arm in battle, it is not also part of his concept that he lost his left arm in battle, nor, indeed, that any other part of his body was severed from him. Beyond the loss of his right arm (hair, fingernails, etc.) every part of his body had at least one touching limit identical with some other

until his death and for some considerable time afterwards. However, since Lord Nelson is not actually distributable into parts beyond a certain point, he is not actually infinitely distributable into parts and so is not continuous.

We did, of course, earlier conclude that it is Parkinson's view that Lord Nelson is indivisible in the sense of being incapable of actual distribution into any parts whatsoever; not in the sense of being incapable of actual distribution into parts beyond a certain point. While, obviously, given this sense of 'indivisible,' it follows from our definition of the divisibility of the continuum that Lord Nelson is not continuous, we have elected to abandon it because of the flaw we noted earlier.[33] Also, we saw that it was necessary to provide a definition of the divisibility of the continuum which differs from Parkinson's. It must not be thought either that we are presenting what we take to be Parkinson's real view, ignoring thereby what he actually says. Rather, since on Parkinson's definitions, of substantial indivisibility and the divisibility of the continuum, it is impossible to provide an intelligible explanation of substantial indivisibility and an explanation of why substances are not continuous, we have provided an alternative pair of definitions which accomplish these ends. This alternative pair of definitions provides an account of substantial indivisibility

which is like Parkinson's account in the fundamental respect that substances are here said to be indivisible in a sense opposed to the sense in which a continuum is said to be divisible. Our aim has thus been to arrive at a defensible version of Parkinson's basic position.

For us, of course, to say of a substance that it is indivisible is the same as to say that it is simple, without parts, truly one, etc. All of these terms denote unity as a transcendental property of being. For Leibniz, it is all the same to say that substantial being is convertible with unity, that substances are indivisible, that they are without parts, truly one, or that substances are a true one, or a true unity (i.e., a substantial form). His point is always that what has substantial being has being which does not admit of distinction into what belongs to it and what belongs to what is other than it.

That all of these terms have fundamentally the same meaning is undisputed by Parkinson. He prefaces his account of Leibniz's derivation of the indivisibility of a substance from the completeness of its concept with the remark:

> In what follows . . . the statement that a substance is indivisible will be taken as equivalent to the statement that it is without parts, that is, 'simple,' genuinely one, a 'monad.'[34]

Since Parkinson does not offer an account of what it means

to say that such and such a substance is without parts, simple, etc., in addition to his account of what it means to say that such and such a substance is indivisible, we may assume that he takes these statements to be equivalent since he takes the meanings of "x is without parts"; "x is simple"; etc., to be fundamentally the same, i.e., that x does not admit of division in the way in which a continuum admits of division. However, once we see that, for substances, to be and to be indivisible are the same, we see that we cannot identify the indivisibility of a substance with the indivisibility which is opposed to the divisibility of a continuum. (We earlier drew this conclusion having examined the identification in the light of Leibniz's claim that substantial being is foundational of being by aggregation.)[35] For, taking the definition of substantial indivisibility which we drew from Parkinson's account, the identification of substantial indivisibility with incapability for actual distribution into parts beyond a certain point, (i.e., incapability for actual infinite distribution into parts) does not leave us saying that substances are incapable of actual infinite distribution. Rather, it leaves us saying that incapability for actual infinite distribution is what it is for substances to be. That is, the being of a substance <u>is</u> its incapability for actual infinite distribution--, and this, as we remarked

earlier, is complete nonsense.

In this chapter we have determined how Russell and Parkinson interpret Leibniz's doctrine of the unity of substance. We have seen that, according to Russell, substantial unity for Leibniz is numerical oneness and that according to Parkinson, substances are indivisible for Leibniz in the sense of 'indivisible' which is the contrary opposite of the sense in which a continuum may be said to be divisible. As we saw in the preceding chapter, both are misinterpretations of Leibniz's doctrine. We also made a critical evaluation of what Russell and Parkinson respectively infer about Leibniz's philosophy on the basis of these interpretations. In the case of Russell, we saw that his interpretation of substantial unity for Leibniz as numerical oneness is the basis of his charge that Leibniz's premises are inconsistent. With the correction of this misinterpretation, we showed that his argument does not establish this charge. In the case of Parkinson, we saw that his interpretation of the indivisibility of substance for Leibniz is the basis of his claim that Leibniz cannot be interpreted as having attempted to deduce his doctrine of the indivisibility of substance solely from his logical doctrine that each substance has a complete concept. Again, we showed that his argument does not establish this claim.

[1]See passage at footnote number 19 of chap. IV, p. 88 above.

[2]See passage at footnote number 15 of chap. IV, p. 86 above.

[3]Leibniz, Papers and Letters, 2:863.

[4]See passage at footnote number 34 of chap. IV, p. 96 above.

[5]Leibniz, Discourse et al., p. 161.

[6]Ibid., p. 251.

[7]Russell, Leibniz, p. viii.

[8]Ibid., p. 4.

[9]Ibid., p. 108.

[10]Ibid., p. 115.

[11]Ibid.

[12]Ibid.

[13]See passage at footnote number 12, p. 138 above.

[14]Russell, Leibniz, p. 116,

[15]Ibid.

[16]Ibid., p. 117.

[17]Ibid.

[18]See passage at footnote number 10, p.137 above.

[19]Ibid.

[20]See passage at footnote number 10, p.137 above.

[21]See passage at footnote number 6 of chap. II, p. 25 above.

[22]Leibniz, Discourse et al., p. 14.

[23]Ibid., pp. 21, 113.

[24]Leibniz, Papers and Letters, 1:361.

[25]Gottfried Leibniz, Logical Papers, trans. and ed. and with an Introduction by G. H. R. Parkinson (Oxford: Clarendon Press, 1966), pp. 72-75.

[26]G. H. R. Parkinson, Logic and Reality in Leibniz's Metaphysics (Oxford: Clarendon Press, 1965), p. 158.

[27]Ibid.

[28]Ibid., pp. 158-159.

[29]Leibniz, Discourse et al., pp. 107-108.

[30]Parkinson, Logic and Reality, p. 165.

[31]Russell, Leibniz, p. 109.

[32]See passage at footnote number 30, p. 156 above.

[33]See pp. 159-60.

[34]Parkinson, Logic and Reality, p. 158.

[35]See pp. 114-15 above.

CONCLUSION

In this dissertation we have endeavored to provide an interpretation of Leibniz's discussion of the problem of unity. The importance of the concept of unity for Leibniz is often noted by his commentators, however, neither his analysis of this concept nor the systematic implications of that analysis have been successfully understood. We substantiated this critical remark by our examination of the work of Russell and Parkinson.

The central point of our interpretation is that Leibniz's concept of substantial unity is precisely the concept of transcendental unity to be found in that main current of scholastic thought whose foremost representative was Thomas Aquinas. The Thomistic analysis of the concept of transcendental unity is hardly distinctive in scholastic tradition, and we could have equally well explicated this concept by means of a survey of several traditions or by concentrating on a writer representative of a major tradition other than Thomism; for example, Duns Scotus or William of Ockham. We selected Aquinas since it is with reference to his original doctrine of substantial form as the principle of unity that we are able to explicate Leibniz's discussion of substantial form.

When Leibniz speaks of substances as one, simple, without parts, indivisible, true unities, etc. he is employing the concept of transcendental unity. The unity of a substance for him is the undividedness of it being. Since unity is identical with being *in re*, substance for Leibniz is simply undividedness of being. Alternatively stated, substance is being always already undivided in its being. Leibniz's thinking moves always in the sphere of a fundamental reflection on unity, and the scholastic understanding of unity as a transcendental determination of being is the true *file d'Ariande* running through the complexities of his system.

In chapter II, "The Scholastic Background" we explicated Aquinas's concept of "the unity which is interchangeable with being", that is, transcendental unity. As we saw, so understood, "unity" does not express the concept of numerical oneness; rather, it expresses the concept which results from the predicative addition of the concept of undividedness to the concept of being. Stated otherwise, to be one in this sense is to be undividedly. This indivision, we saw, is not for Aquinas the indivision which is opposed to the division of the continuum. Rather, the kind of division to which transcendental unity is opposed is the kind which obtains between two substances, namely, their necessary non-identity. Such division Aquinas calls

"division according to formal opposition". We defined "formal opposition" for Aquinas as "the occurrence of a plurality of individual substantial forms in a single substance". Substantial form, we saw, is that which confers determinate actuality on prime matter. Since, for a given substance, the actuality of its prime matter is its esse, a substance denominated by a plurality of substantial forms would have a pluralized esse, that is, it would not be identical with itself. We thus defined division according to formal opposition as follows: two substances are divided according to formal opposition if and only if the being which would result were they identical possesses a plurality of substantial forms. To say of a substance that it is transcendentally undivided is to deny that the condition of its being is the condition of the being of substances divided according to formal opposition, that is, its identity with itself does not result in its possessing a plurality of substantial forms. In other words, to say of a substance that it is undivided in this sense is to deny that the condition of its being is the condition of the being of distinct, that is, non-identical, substances. Later, in chapter IV, we saw that this analysis of transcendental unity for Aquinas is precisely Leibniz's understanding of the unity of substance.

We began our exposition of Leibniz's analysis of the concept of unity with an account of his critique of the Cartesians and the Gassendists regarding their positions on the composition of continuous substance. This account is contained in chapter III, "Unity and the Continuum". Against the Cartesians, Leibniz argued that the concept of a res extensia is a self-contradictory one. According to Leibniz, extension is constituted by the aggregation of parts, which parts, since they are themselves extended, are in turn constituted by the aggregation of parts, and so on ad infinitum. A whole, however, can have no more reality than what is present in its parts. Since an extension is constituted by infinitely many aggregate parts, the condition alone upon which any part is real, namely, that its parts in turn be real, cannot be fulfilled. Therefore, the concept of a res extensia is a self-contradictory one. According to the Gassendists, extended substance is composed of infinitely hard, and so actually indivisible atoms. Against this view, Leibniz argued that as long as such atoms are extended, their division is not logically impossible, and, therefore, they are merely aggregates. With this point established, Leibniz's argument against the Gassendists proceeds along the same lines as his argument against the Cartesians.

In these arguments against the Cartesians and the

Gassendists, we saw an application of Leibniz's general argument for the indivisibility of substance. Moreover, insofar as the arguments show why, for Leibniz, matter cannot be the principle of unity, they introduce us to his problem of finding such a principle. It was to this end that he revived the scholastic doctrine of substantial form. The full exposition of Leibniz's doctrine of substantial indivisibility together with the doctrine of substantial form as the principle of such indivisibility was presented in sections (i) and (ii) of chapter IV, "Unity and Being". Finally, our discussion of the problem of the composition of continuous substance allowed for an examination of the context in which Leibniz's doctrine of substantial indivisibility can easily be misunderstood to refer to the kind of indivisibility which is opposed to the divisibility of continua. His objection to the positions of both the Cartesians and the Gassendists appears to be that extension is not indivisible in this way and therefore cannot be the locus of substantiality. G. H. R. Parkinson interprets Leibniz's doctrine of substantial indivisibility in this way and in the final chapter "Some Recent Interpretations", we showed that his reading cannot be maintained.

In chapter IV, "Unity and Being" we presented an expository analysis of Leibniz's argument for the indivisibility

of substance. His argument against the positions taken by the Cartesians and the Gassendists over the question of the composition of continuous substance is but a special application of this argument. Together with an examination of a wide selection of the relevant texts, our analysis of this argument was the basis for our conclusion that the indivisibility, or unity, to which Leibniz continually refers in his writings is precisely the unity which Aquinas referred to as "the unity which is interchangeable with being".

In the first section of chapter IV, titled "Unity and Bodies: The Issue in the Foreground", we traced the course of Leibniz's discussion with Arnauld over the question of the unity of bodily substance. According to Leibniz, if bodies have substantiality then they must also have unity, and the principle by which such unity is constituted is the principle of substantial form. Alternatively, for Leibniz, bodies might not be substances, in which case they are to be regarded, according to him, as "beings by aggregation". For Leibniz, all being is either as the being of a substance or as the being of an aggregate. Since to be and to be one are the same for Leibniz, his distinction between modes of being is also a distinction between modes of unity -- a consequence which he recognizes. He identifies the mode of unity of a being by aggregation as numerical oneness in re-

spect of a relation. That numerical oneness is the mode of unity of a being by aggregation and not the mode of unity of substantial being is an important point. We saw in the final chapter, "Some Recent Interpretations" that Betrand Russell interprets Leibniz to the contrary and that his interpretation cannot be maintained in view of the textual evidence.

In the second section of chapter IV, titled "The Monad as Unum Transcendens" we presented our analysis of Leibniz's statement that if there are no "beings endowed with a true unity", that is, beings informed by a substantial form, or simply, substances, then there will be no foundation for the reality of beings by aggregation. This statement is the heart of his argument for the indivisibility of substance. By explicating it we achieved an understanding of the manner of reality possessed by substances, and on this basis we were able to determine the meaning which the phrase "a true unity" has for Leibniz.

Our analysis of the manner of reality possessed by substances was accomplished in two stages. The first stage culminated in showing that in an ordinary sense of "undivided" we may discern a common core of meaning between Aquinas's sense of this word as he uses it to refer to the unity of being, and a sense in which it is both natural and

appropriate to describe the being of substance as undivided being. We understood Leibniz's description of a being by aggregation as a being "which obtains its reality from nowhere but that of its constituents" to mean that the reality of such a being is divided among things other than itself. Accordingly, we defined a substance as a being which has its being undividedly and recalled Aquinas's statement that "'one' means undivided being".

In the second stage of our analysis of the mode of being of substances, we determined that the fully articulated Thomistic sense of "undivided" as the denial of "division according to formal opposition" precisely describes substantial being for Leibniz. As a further articulation of our description of being by aggregation we said that such a being has the being of distinct substances; "distinct" meaning non-identical. We next established that for Leibniz, to say of a substance that it is self-identical is just to deny that the condition of its being is the condition of the being of distinct substances. This denial is also what Aquinas means by saying that a substance has its being undividedly. Since for Leibniz, the being of a substance is its self-identity, it follows that substantial being is for Leibniz what undividedness of being, unity, is for Aquinas. And finally, since substantial being is substantial unity for

Leibniz, we concluded that, for him, the unity of substance is what Aquinas spoke of as undividedness of being.

In the third and final section of chapter IV, "Unity and Phenomenality", we presented an analysis of Leibniz's concept of a being by aggregation; what he otherwise calls a "phénomène bien fondé". The question of how sensible things have their reality is a perennial one, and Leibniz's answer is: "sensible things have their reality as aggregates or substance". Our analysis was built around our determination that the unity of a being by aggregation consists of its numerical oneness. The numerical oneness of a being by aggregation, we said, is the numerical oneness of the thought which, with respect to some abstract concept such as time, place, movement, and shape, thinks the many reals as singly real. So, for example, several stones make up one pile by virtue of being thought through the abstract concept of place as being in one place. Since what constitutes the unity of the aggregate is also that which constitutes its reality, it follows, we said, that the reality of the aggregate is the reality of thought.

We determined the meaning of the phrase "the reality of thought" as follows. For Leibniz, we saw, the various abstract concepts with respect to which thought thinks the many as one are manners of relation. Relation is thus

constitutive of being by aggregation, and so the manner of reality of relations is the manner of reality of aggregates. We saw next that, for Leibniz, the reality of relation is the reality of the "divine reason" or "first understanding". For Leibniz then, we concluded, the reality of sensible things is the reality of the divine thought.

In chapter V, "Some Recent Interpretations" we presented a critical evaluation of the interpretations of Leibniz's doctrine of the unity of a substance as found on Betrand Russell's Critical Exposition of the Philosophy of Leibniz and G. H. R. Parkinson's Logic and Reality in Leibniz's Metaphysics.

As we saw, Russell interprets Leibniz's doctrine of the unity of substance as the assertion that numerical oneness and being are the same. In section one, "Unity and Being: The Issue in the Foreground" we examined texts which show clearly that, for Leibniz, substantial unity is not numerical oneness. Furthermore, in section two of that same chapter, "The Monad as Unum Transcendens" we showed that this interpretation of substantial unity for Leibniz cannot be meaningfully put forward as an explication of his statement that without substantial unity there is no foundation for the reality of being by aggregation.

On the basis of his interpretation of substantial unity

as numerical oneness, we saw that Russell charges Leibniz with maintaining an inconsistent set of premisses. Russell attempts to show this inconsistency by means of a dilemma into which, he claims, Leibniz's philosophy falls. This charge of inconsistency is the major critical contribution of Russell's book.

One half of Russell's dilemma is that if Leibniz held that there is a plurality of substances, then his solution to the continuum problem falls into paradox. Russell supports this statement with his argument that it was only by denying that there is a plurality of substances that Leibniz was enabled to provide a paradox-free solution to the continuum problem. We saw that Russell failed to show this since Leibniz never denied that there is a plurality of substances in the way in which Russell interprets him to have done so, that is, by denying that there are numerically many substances.

The first half of Russell's dilemma is that if Leibniz affirmed the plurality of substances, then he did not provide a paradox-free solution to the continuum problem. Together with his failure to show that, on the contrary assumption, Leibniz did solve the continuum problem, it follows, we said, that Russell cannot show that he is not presenting as a criticism of Leibniz that he failed to solve the continuum

problem because it is logically impossible to do so.

The second half of Russell's dilemma is that if Leibniz denied that there is a plurality of substances then he could not also have maintained that there is an external world or, as Russell puts it "existents other than myself". For this inference to follow, we said, it must be supposed that number is the principle of the diversification of the real. For Leibniz, however, the principle of the diversification of the real is the principle of non-contradiction. Since, for Leibniz, substances are distinct only in the sense of being necessarily non-identical, it is open to him to maintain that there is no plurality of substances, plurality being merely a phenomena, while still affirming that there is an external world. We concluded that since one half of Russell's dilemma is false, the dilemma collapses and consequently, Russell has not by this argument shown that Leibniz's premisses are inconsistent.

We next turned to G. H. R. Parkinson's interpretation of Leibniz's doctrine of substantial unity as presented in his Logic and Reality in Leibniz's Metaphysics. According to Parkinson, we saw, substances are indivisible for Leibniz in the sense of "indivisible" which is opposed to sense in which the continuum may be said to be divisible. Upon analysis of Parkinson's definitions of the indivisibility of substance

and of the divisibility of the continuum, we found it necessary to introduce definitions of our own in order to have before us a defensible version of Parkinson's basic position that these are opposing concepts for Leibniz. As a Parkinsonian definition of the divisibility of the continuum, we suggested that the continuum might be said to be divisible in the sense of being capable of actual infinite distribution into parts. Accordingly, we suggested that substances might be said to be indivisible in the sense of being incapable of actual infinite distribution into parts.

In section two, "The Monad as Unum Transcendens" of chapter IV , we showed that Leibniz's doctrine of the indivisibility of substance cannot be meaningfully interpreted as the indivisibility which is opposed to the divisibility of the continuum. As we saw, Leibniz identifies substantial indivisibility with substantial being. In terms of our reconstruction of Parkinson's definition of substantial indivisibility, this identification leaves us saying that, for Leibniz, substantiality is the incapacity for actual infinite distribution into parts. This, we said, is a meaningless statement. Furthermore, we saw that, for Leibniz, substantial indivisibility is foundational of the reality of being by aggregation, yet the statement that the incapacity for actual infinite distribution into parts is foundational in

this way is incomprehensible.

What follows now are some applications of our researches into Leibniz's metaphysics both to the classical problem of the self as well as to more recent concerns.

In the famous section "Of Personal Identity" in his Treatise Of Human Nature, Hume writes:

> The mind is a kind of theatre, where several perceptions successively make their appearance; pass, re-pass, glide away, and mingle in an infinite variety of postures and situations. There is properly no simplicity in it at any one time, nor identity in different; whatever natural propension we may have to imagine that simplicity and identity. The comparison with the theatre must not mislead us. They are the successive perceptions only, that constitute the mind; nor have we the most distant notion of the place, where these scenes are represented, or of the materials, of which it is compos'd.[1]

Earlier in this same paragraph occurs Hume's well-known description of the self as "but a bundle or collection of different perceptions".[2] Leibnizians might reply to Hume's description of the self as follows.

To begin, let us assume that Hume's point is that the self has the reality of a collection and not the reality of a substance. To this Leibniz would respond by arguing that there must be simple substances whose reality provides the foundation for the reality present in the collection and that it is these simple substances which are selves. Were

Hume to argue that the perceptions themselves provide the foundation for this reality, Leibniz might respond by arguing that perceptions are not simple but composed of infinitely many lesser perceptions (petites perceptions).[3] However, even if Leibniz could establish this he would still be left with the general problem of explaining how the reality of simple substances can be foundational of the reality of a collection of infinitely many parts. This problem is essentially the problem of the composition of the continuum, Leibniz's solution to which, as we noted above, is of formidable complexity.[4]

Alternatively, Hume's point may not be that the reality of the self is the reality of a collection but, rather, that the self has no reality at all. For Leibniz, all reality is as the reality of simple substances or has its foundation in the reality of simple substances and hence, this denial is, for him, the denial that anything is real. One might wish Leibniz to respond with an argument to show that there are simple substances, however, no such argument appears to be in his writings. All Leibniz shows is that if there are beings by aggregation then there must also be simple substances. So, for example, in the Monadology, he writes: "there must be simple substances because there are composites; for a composite is nothing else than a collection or aggregatum of simple substances".[5] Since the reality of an

aggregate is for Leibniz just the reality of its substantial foundation, the admission of being by aggregation is already the admission of substantial reality. Against an opponent who refused to concede substantial reality Leibniz apparently has no argument. Were Hume thus to insist that the self never is but is always coming to be, that it is never identical with itself but always identical with what is other than itself, Leibniz would have no defense. This is just to say that substantial reality (being itself) remains a presupposition for Leibniz. Since this presupposition is a necessary condition for representative thoughts, it follows that the thesis that thought is representative is also a presupposition for Leibniz.

Equally as famous as Hume's critique of the simplicity of the self is Kant's critique of the same doctrine in his Critique of Pure Reason. He writes:

> The proposition 'A thought can only be the effect (Wirkung) of the absolute unity of the thinking being' cannot be treated as analytic. For the unity of the thought, which consists in many representations, is collective, and as far as mere concepts can show, may relate just as well to the collective unity of many substances acting together (as the motion of a body is the composite motion of all of its parts) as to the absolute unity of the subject. Consequently, the necessity of presupposing, in the case of a composite thought, a simple substance, cannot be demonstrated in accordince with the principle of identity.[6]

Leibnizians might offer the following analysis of Kant's argument. Insofar as Kant attributes a collective unity to the thought which consists in many representations, he also attributes to it some manner of reality. This is so since whatever has unity (of whatever kind) also has being (of some kind). Kant's argument is that this collective unity of the thought may relate to the collective unity of the action of several substances just as well as to the absolute unity of the action of the thinking being. It follows that the manner of reality he must assign to the thought must also be related to this collective unity of action. For Leibniz, as we have seen, all collective unity is constituted by the numerical oneness of the thought which thinks the many as singly real.[7] Consequently, for Leibniz, the collective unity of the action of several different substances must itself be a unity of thought thinking the several actions as singly real, that is, as a single act. Furthermore, this thought must also contain several representations since I cannot think the several actions as a single act without representing each of these actions separately. That is, a representation of each of the several actions must be contained in my thought if I am to think them as a single act. It follows that the unity of this thought is also a collective unity and so, on Kant's analysis, must be related to the collective unity of the action of several

different substances. Thus, Kant's analysis generates an infinite regress. The unity of the first thought is related to the unity of a second and that in turn to the unity of a third, and so on ad infinitum.

On Kant's analysis, no manner of reality can be attributed to thought. This is as follows. Since Kant attributes a collective unity to thought he must also attribute a collective reality to it. But the reality of a collection cannot be intrinsic to it. The concept of an intrinsically real whole of parts is a self-contradictory concept.[8] Therefore, the reality of the thought must belong to something other than itself, specifically, it must belong to whatever it is to which its unity is related. But that to which its unity is related is itself a thought, and the reality of this thought is also not intrinsic to it and so must be related to the reality of yet a third thought, and so on. It follows that the condition upon which any thought has reality, namely, that the thought to which it is related be real, cannot be fulfilled. Since no manner of reality can be assigned to thought, neither can any manner of unity, and this contradicts the hypothesis of the argument. Leibnizians may conclude that not by this argument at least has Kant shown that the unity of several representations in a single thought is compatable with the denial that this unity is the action of the absolute unity of the thinking

being.

In the field of contemporary metaphysics, the theory of transcendental being can be usefully applied to the general problem of interpretation as it emerges in regard to works of art as well as to philosophical and religious writings. The transcendentals constitute a possibility of being which is intermediate between subjectivity and objectivity. Unity, for example, while identical with being *in re* is nonetheless distinguishable from being as regards its concept. "*One*", writes Aquinas, "adds something to *being* logically".[9] Unity does not come before us as a reality added to being but, rather, as a conceptual note not already thought in the concept of being. But, since unity is identical with being, its reality cannot consist in its being thought; if it did, being itself would become strictly equivalent to being thought. Gottfried Martin writes:

> One immediately sees that the interpretation of unity as an Idea and its interpretation as a *res* in the sense of a real accident both remain unsatisfying. This was perceived early on and has led to the insight that the disjunction: something is either real or a mere conception, is insufficient. Instead, it proves to be necessary to regard transcendental being as a new, intermediate possibility of being. . . .
>
> . . . Transcendental unity is neither a reality in the sense of a *res* nor is it a mere conception. It has a reference to *ratio* but its being is not exhausted in being-conceived . . . we see here emerging a new, third mode of being, which transcendens the

> old disjunction between ens reale and ens rationis.10

The need for a mode of being intermediate between subjectivity and objectivity emerges rather forcibly in the theory of interpretation. In one important tradition, interpretation is held to be at least partially the outcome of one's own experience of the work. The interpretation is purported to have a more than merely personal validity despite the fact that not all of what is required for another to determine its validity is contained within itself. The general effort to construct a model for interpretation in which the experience of the interpreter himself plays a decisive role goes back to the work of Schliermacher and his immediate predecessors, Friedrich Ast and Friedrich August Wolf. In the field of recent biblical interpretation, the name of Rudolph Butlmann comes to mind whose program for the demythologization of the bible essentially involves the interpreters own existential self-understanding as provided by the New Testament kergyma. As an example of such an interpretative model, consider the following account of Jasper's Nietzsche interpretation offered by Richard Howey:

> For Jaspers, to interpret Nietzsche means to enter into dialogue with Nietzsche's Existenz as it finds expression in Nietzsche's writings. . . . Jaspers emphatically denies that such dialogue is "merely subjective," and, since it is clearly not "objective" in any

> ordinary empirical sense, this suggests that there is some kind of self-validating objectivity which resides with the transcendental character of Existenz itself. . . . Even though this middle ground which Jaspers occupies between subjectivity and objectivity is well protected, it is nonetheless problematic . . .[11]

Finally, in the field of aesthetic interpretation, one might mention the name of John Dewey. For Dewey, aesthetic experiences are not wholley subjective, nor, of course, are they wholley objective. "The experiences," he writes, "that art intensifies and amplifies /do not/ exist solely inside ourselves . . . Art would not amplify experience if it withdrew the self into the self nor would the experience that results from such retirement be expressive."[12]

Whether as the experience of something presented through the text (Nietzsche's Existenz, the New Testament kergyma) or as the aesthetic experience of the work of art, such experiences are held to have more than a merely subjective validity while yet having no objective reference in the work itself. Perhaps the interpretative models devised for research in these various fields can be shown to have a common root in the theory of transcendental being. All interpretation, it might be argued, articulates the apprehension of a transcendental characteristic. As we said earlier, such characteristics, for example, unity, come before us not as

a property of an object but as a thought content not already contained in our concept of the object. It is useful to recall here that unity is only one of the transcendental characteristics distinguished in scholastic tradition. In addition to being and unity, Aquinas added the concepts of goodness, truth, thing, and something, and perhaps even beauty.[13] Duns Scotus further expanded the number of transcendentals by introducing the idea of disjunctive transcendentals, for example, every being is either infinite or finite, simple or compound, necessary or contingent, etc.[14]

Thus, it might be argued that the aesthetic features of a musical composition, for example, its unity of form and content, its sonority, and so on are not to be found among its objective features but nevertheless have a reality not exhausted by their being thought. A similar point can be made about the being of Nietzsche's Existenz. Here too I apprehend a transcendental characteristic. This being is not to be found among the objective facts of Nietzsche's life and writings, nevertheless it is not a mere thought construct. The analysis of the proclamation of the New Testament might proceed along similar lines.

The application of this analysis to Nietzsche's Existenz or the kergyma is complicated by the fact that in both cases, transcendental being is attributed to a mode of self-hood which comes into play in the interpretative act;

namely, Jaspers's own Existenz and Bultmann's own existential self-understanding. Here the transcendental character of my own being can be pointed out and, as such, distinguished from myself as mere subject. Insofar as this being enters into the interpretative act (as, for example, participant in a dialogue between Existenzen) the interpretation itself achieves a more than merely subjective validity.

With these suggestions for further study we bring our work to a close. It is our hope that the insights into Leibniz's thought which we have achieved not be taken as final but as opening up new possibilities for interpretation. As always, the promise of such interpretation is a deeper understanding of oneself.

[1]David Hume, A Treatise of Human Nature, ed. and with an Analytical Index, by L. A. Selby-Bigge (Oxford: Clarendon Press, 1888), p. 253.

[2]Ibid., p. 252.

[3]Leibniz, Papers and Letters, 2:905; also see Leibniz, New Essays, pp. 116-118.

[4]See footnote number 37 of chap. III above.

[5]Leibniz, Discourse et al., p. 251.

[6]Immanuel Kant, Critique of Pure Reason, trans. Norman Kemp Smith (New York: St. Martin's Press, 1929), p. 336.

[7]See pp. 120-22 above.

[8]See footnote number 37 of chap. above.

[9]Aquinas, Basic Writings, 1:86.

[10]Martin, General Metaphysics, pp. 80-90.

[11]Richard Lowell Howey, Heidegger and Jaspers on Nietzsche: A Critical Examination of Heidegger's and Jaspers' Interpretations of Nietzsche (The Hague: Martinus Nijhoff, 1973), p. 39.

[12]John Dewey, Art as Experience (New York: Capricorn Books, 1934), p. 103.

[13]Thomas Aquinas, The Disputed Questions on Truth, vol. 1 trans. by Robert W. Mulligan, vol. 2 trans. by James V. McGlynn, vol. 3 trans. by Robert W. Schmidt, 3 vols. (Chicago: Henry Regnery CO., 1952-54), 1:3-9.

[14]Duns Scotus, Philosophical Writings, trans. with an Introduction by Allan Wolter (Indianapolis: The Bobbs-Merrill Co., 1962), p. 177, n. 4.

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